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# Women's Health and Nutrition

Making a Difference

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## Making a Difference

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Anne Tinker  
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The World Bank  
Washington, D.C.

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# Foreword

*Women's Health and Nutrition: Making a Difference* comes at an important time. The health risks women face due to their disproportionate poverty, low social status, and reproductive role merit increased attention. The World Bank recognizes that improving women's health and nutrition contributes significantly to poverty alleviation and human resource development. Investing in women's health makes sense on both humanitarian and economic grounds.

This paper examines women's health problems from infancy to old age and sets forth a strategy for developing countries and their partners to improve women's health and nutrition through a set of cost-effective essential health services that address the major causes of death and disability among women in developing countries. Because social and cultural factors influence women's health and well-being, the paper also recommends policy reforms and public education programs that promote positive health practices and reduce gender discrimination. Vitally important to this effort in the longer term are increased education for girls, greater employment

opportunities for women, and dedicated efforts to involve women more fully in the development process. The paper recommends special emphasis on the adolescent girl, since it is in this transitional stage when the intergenerational cycle of early childbearing, poor health and nutrition, and poverty can be broken.

This paper was prepared to assist World Bank staff and their colleagues in borrowing countries with tools for analysis and planning to improve women's health and nutrition. It is hoped that others who have a professional concern for women's health and nutrition in donor governments, international agencies, and nongovernmental organizations will find it useful in the design, implementation, and monitoring of women's health and nutrition programs.

In partnership, governments, donor and other international agencies, and local communities have considerable power to improve the health and nutrition of women. Working together, we can make a difference for women of this generation and their daughters who follow.

Janet de Merode

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In early 1993, the World Bank commissioned ten working papers in women's health and nutrition on topics ranging from socioeconomic factors, which influence women's access to nutrition and health care, to studies on adolescent reproductive health and violence against women. The World Bank would like to acknowledge the contribution of the authors who include George Ascadi, Gwendolyn Johnson-Ascadi, Jill Gay, Lori Heise, Joe Kutzin, Kathleen Merchant, May Post, Judith Senderowitz, Jacqueline Sherris, Kajsa Sundström, and Mary Eming Young. The paper also draws heavily on the recent World Bank Discussion Paper, *Making Motherhood Safe*, as well as the disease burden assessment and cost-effectiveness analysis prepared for the *World Development Report 1993, Investing in Health*.

In May, 1993, the World Bank convened a group of specialists in women's health to review the draft working papers at the Rockefeller Foundation Conference Center in Bellagio, Italy, and to develop a conceptual framework for this Best Practices paper. Participants at this meeting included experts from Bangladesh, Brazil, India, Kenya, Mexico, Poland, Tanzania, Turkey, and Zaire as well as representatives of specialized international organizations.

An external consultation in London in March, 1994, contributed to the final document. At this meeting comments were particularly appreciated from government officials and other experts from Brazil, Ecuador, India, Indonesia, Kenya,

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# List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ARI	Acute Respiratory Infection
CHW	Community Health Worker
DALY	Disability-Adjusted Life Year
ECA	Europe and Central Asia
EME	Established Market Economies
FSE	Formerly-Socialist Economies of Europe
HIV	Human Immunodeficiency Virus
IEC	Information, Education, and Communication
IUD	Intrauterine Device
KAP	Knowledge, Attitudes, and Practices
LAC	Latin America and the Caribbean
MCH	Maternal and Child Health
MENA	Middle East and North Africa
NGO	Nongovernmental Organization
PAHO	Pan American Health Organization
PID	Pelvic Inflammatory Disease
RTI	Reproductive Tract Infection
SSA	Sub-Saharan Africa
STD	Sexually Transmitted Disease
TB	Tuberculosis
TBA	Traditional Birth Attendant
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USSR	Union of Soviet Socialist Republics
WHO	World Health Organization
WDR	World Development Report
WID	Women in Development

# Abstract

From poverty reduction to intergenerational benefits and economic efficiency, the arguments for investing in women's health and nutrition are compelling. Many health interventions directed specifically at women are among the most cost-effective health interventions available today. Improving women's health has multiple external benefits that enhance the survival and well-being of children and the productive capacity of the economy. And investment in women's health can help remedy health disadvantages that are rooted in women's low socioeconomic status and reproductive functions and responsibilities.

This paper provides an overview of women's health and nutrition by considering the entire life cycle of the women—a meaningful approach because problems and behaviors that begin in childhood and adolescence have cumulative consequences that can profoundly affect a woman's health in later life. Previously neglected periods of a women's life, such as adolescence and the post-reproductive ages, are examined. In addition to bio-

logical problems, the paper addresses the broader social issues that affect health, such as gender discrimination and violence against women.

Offering a rational basis to improve women's health that works within the constraints faced by developing countries, the paper provides guidance for policy makers and program planners on how to redirect scarce resources to the most cost-effective interventions. The Essential Services for women's health described in the paper are interventions that have widespread benefits of sufficient importance to justify public funding, even in the poorest countries. The Expanded Services consist of additional interventions that can be implemented by middle income countries—and by poorer countries to the extent resources permit. The paper also reviews country experiences and recommends actions governments can take—and the kind of support international organizations can provide—to make a difference in the health and nutrition of women in developing countries.



# Executive Summary

The arguments for accelerating investment in women's health and nutrition are compelling: such investments promote equity, widespread benefits for this generation and the next, and economic efficiency. Women's disproportionate poverty, low social status, and reproductive role expose them to high health risks, resulting in needless and largely preventable suffering and premature death. A woman's health and nutritional status is both a national and an individual welfare concern because it affects the next generation, through its impact on her children, as well as her productivity at the household level and in the informal and formal sectors of the economy. Because many of the interventions that address women's health problems are highly cost-effective, any national health investment strategy based on achieving the greatest health gains at the least cost will give considerable emphasis to interventions directed at women. Special attention is warranted to reach women during adolescence, when reproductive and other lifestyle behaviors set the stage for later life.

## Women's Health throughout the Life Cycle

A life cycle approach to women's health takes into account both the specific and the cumulative effects of poor health and nutrition. Many of the health problems affecting women of reproductive age, their newborns, and older women begin in childhood and adolescence. For example, inadequate diet in youth and adolescence can lead to anemia or stunting, which contribute to complications in childbirth and underweight babies, and insufficient calcium can lead to osteoporosis later in life.

The following examples sketch a picture of some of the health and nutrition problems women face in developing countries:

- In a clinic in Asia, 7,999 of 8,000 abortions performed after parents learned the sex of the fetus averted the birth of girls.

- In Africa each year, an estimated 2 million young girls, most between four and eight years of age, are subject to genital mutilation (removal of part or all of the external genitals).
- The pregnancy rate among unmarried adolescents is at an all-time high in many countries.
- Women between the ages of fifteen and twenty-five now account for 70 percent of HIV infections among females worldwide.
- Anemia is highly prevalent throughout the developing world and appears to be worsening in Sub-Saharan Africa and South Asia, where it affects 40 to 60 percent of women fifteen to forty-nine years old.
- Women's lack of access to contraceptives results in more abortions than live births in parts of Eastern Europe and Central Asia. Worldwide, complications from unsafe abortion are a major cause of maternal death.
- While infant mortality rates have dropped by half over the last three decades, maternal mortality ratios have lagged substantially, with little evidence of progress in the least developed countries.
- Cancer of the cervix, which peaks among women between forty and fifty years of age, accounts for more new cases of cancer each year in developing countries than any other type of cancer.
- Recent evidence reveals that domestic violence, rape, and sexual abuse are a significant cause of disability among women; between 20 and 60 percent of women surveyed in various countries report that they have been beaten by their partners.

## Essential Services for Women

Most of the leading causes of death and disability of women in developing countries can be prevented or treated through highly cost-effective interventions.

Any national package of interventions designed on the basis of cost-effectiveness and the disease bur-

den would include the following Essential Services for women:

- *Prevention and management of unwanted pregnancies.* Family planning services, treatment for complications of unsafe abortion, and safe abortion services can greatly reduce death and illness among women.
- *Safe pregnancy and delivery services.* Prenatal care, safe delivery, and postpartum care can have a significant impact on the health of women and their newborn children. Services should include tetanus toxoid immunization, micronutrient supplementation, counseling, and the detection, prompt referral, and treatment of obstetric complications.
- *Prevention and management of sexually transmitted diseases.* Promoting condom use can help prevent the spread of sexually transmitted diseases (such as syphilis, gonorrhea, chlamydia, and HIV/AIDS), and timely management of such diseases can avert both acute and long-term complications.
- *Promotion of positive health practices, including delayed childbearing, safe sex, and adequate nutrition.* Public education programs and counseling by health workers can help to change social norms and encourage girls and women to adopt healthful behaviors and seek medical help when needed. Schools can explore these topics in the classroom.
- *Prevention of practices harmful to health, such as less food and health care for girls than boys and violence against women.* By raising awareness among policymakers, health providers, and the public of the harmful health consequences of these practices, governments can be a positive force for change.

Even in the poorest countries, governments can help to establish these Essential Services and ensure access to them by financing health interventions for the poor in the national package and interventions to change behavior for the entire population. Services beyond the national package should be financed from private sources.

Where resources permit a more comprehensive national package of interventions against a larger number of diseases and conditions, the Essential Services could be expanded and upgraded to include:

- A wider choice of short- and long-term contraceptive methods
- Enhanced maternity care
- Expanded screening for and treatment of sexually transmitted diseases

- Nutrition assistance for vulnerable groups
- Cervical and breast cancer screening and treatment
- Increased attention to early prevention
- Increased policy dialogue and strategic efforts to reduce gender discrimination and violence
- Greater attention to the health problems of women beyond reproductive age.

Many of these interventions require collaboration between health and other agencies in the public and private sectors, including private insurers and private providers. Even when governments finance the Essential Services, they do not necessarily have to provide them. Publicly financed services can be provided by public or private providers. And to ensure coverage of those who have private health insurance, governments can mandate that private health insurance benefits always include the Essential Services.

### What National Health Programs Can Do

Governments have considerable power to improve the health outlook for their female citizens if they are willing to enact and promote gender-sensitive policies and to strengthen women's health services. Effective policy reform must include not only changes in the health delivery system but also efforts to redress social, educational, and economic inequities.

Existing services can be improved, extended, and tailored to fit local conditions. For example, where cultural norms discourage women from receiving care from men, governments could recruit and train more female health providers. In the design and implementation of health programs, attention can be paid to factors that have particular relevance to women because of biological and social influences: access, quality (including provider competence, counseling, continuity of care, and privacy), number of female health providers, and responsibilities of nonphysicians, such as midwives. Collection and analysis of gender-specific information on health care utilization and health status can guide governments in the design and implementation of women's health services.

By working closely with the private sector to deliver information and services to improve women's health and nutrition, governments can help derive the greatest benefits from national health resources. Nongovernmental organizations that are well-respected in the community can be helpful in reaching and representing disadvantaged women. Private for-profit providers can supplement

government programs by offering a broader range of services to those who can afford to pay for them.

National education programs can be used to promote positive health behaviors and to change attitudes and conduct that are harmful to women. Such programs have been effective in changing a wide range of health behaviors related to family planning, nutrition, AIDS prevention, and tobacco consumption.

### **What Assistance Agencies Can Do**

By increasing policymakers' awareness of the real social and economic gains from improvements in women's health, foreign assistance agencies—including the World Bank—can have an impact far beyond their monetary contribution. International agencies can help by informing national decision-makers about lessons gleaned from worldwide experience and by supporting interventions that have proved cost-effective. External inputs may be particularly helpful in the design of demonstration projects and the expansion of women's health programs to a national scale.

### **Overview of Women's Health and Nutrition: Making a Difference**

Education, employment opportunities, and other factors outside the health sector have an important bearing on women's health. Although this paper addresses actions that can be taken by the health sector, it also provides recommendations for broader efforts. Its recommendations for investments to address the key health problems affecting women at different stages of life are based on concerns for human welfare and economic efficiency. The paper suggests essential clinical and public health interventions and emphasizes the special benefits derived from targeting programs to the young. Finally, it discusses factors to be considered in planning and implementing government programs and describes ways that assistance agencies can support such programs. The hope is that the

examples of experience in many countries will spark fruitful discussion on policy and program options, stimulate action, and improve the coordination needed to make a difference in the health of women throughout the world.

To guide the reader, the following summary describes the paper's contents by chapter and intended audience:

- *Why Invest in Women's Health and Nutrition?* Chapter 1 presents reasons for financing interventions to improve women's health and nutrition. It may be especially useful for policy dialogue.
- *An Overview of Women's Health and Nutrition.* Chapter 2 summarizes key health problems affecting women. It provides a framework for policy decisions and program planning.
- *Health and Nutrition Interventions for Women.* Chapter 3 lists the essential and expanded health services recommended to address women's health problems in low- and middle-income countries. It may be useful to program planners and managers as well as policymakers.
- *Issues for National Program Planning.* Chapter 4 discusses key aspects of program planning and implementation, including the impact of government policies, the need for government financing, collaboration with the private sector, quality of care, and data requirements. It may be helpful to health professionals at all levels as well as to national decisionmakers and program planners.
- *Role of International Assistance.* Chapter 5 suggests ways that the World Bank and other assistance agencies can contribute to improvements in women's health services through policy dialogue, sector work, project preparation, funding for research, and donor coordination. It also discusses women's health problems and potential strategies on a regional basis. It is intended primarily for staff of the World Bank and other assistance agencies.

More detailed information needed for program planning is included in the annexes.

# Why Invest in Women's Health and Nutrition?

Evidence from around the world has demonstrated that investment in people's health is fundamental to improving a country's general welfare and economic growth, as well as to reducing poverty (World Bank 1993c). This report focuses on how public investment in women's health and nutrition, in particular, can contribute to balanced sustainable economic growth by:

- *Improving equity and the quality of life.* Initiatives to improve women's health could save millions of women from needless suffering or premature death and enable them to lead fully productive lives. Today, women in many countries suffer a disproportionate share of avoidable disability largely because of their low socioeconomic status and reproductive role.
- *Conferring widespread benefits.* Investments in women's health have multiple payoffs. In addition to improving individual well-being and the actual and potential economic contribution women make, families, communities, and the national economy also significantly benefit. In particular, women's health has a major impact on child survival, family well-being, and the health and productivity of future generations.
- *Improving efficiency.* Redirecting public spending to highly cost-effective interventions will improve allocative efficiency. Health interventions that address women's health problems are among the most cost-effective available in developing countries. More than half of the years lost to poor health by women up to age forty-five could be partially or substantially saved through low-cost health interventions.

## Differentials in Health

Fertility and infant and child mortality rates have dropped substantially in developing countries over the past three decades. From 1962 to 1992 infant mortality in the developing world dropped by 50 percent, and fertility rates fell by 40 percent (UN 1993). Fertility regulation has contributed to women's health by reducing the number of pregnancies—and their associated risks—and giving women more control over their lives.

Progress has been much slower in other areas significant to women's health. Maternal mortality ratios and rates reflect the widest disparity in human development indicators between developed and developing countries.<sup>1</sup> In Sub-Saharan Africa, where the ratio is 700 maternal deaths per 100,000 live births, a woman runs a one in twenty-two risk of dying from pregnancy-related causes during her lifetime; in South Asia, the risk is one in thirty-four; and in South America, one in 115—the risk drops in Northern Europe to one in 10,000 (UN 1993; Herz and Measham 1987). Except in countries with relatively low maternal mortality ratios (fewer than 100 maternal deaths per 100,000 births), the World Health Organization has found scant evidence of any progress in reducing maternal mortality in recent years (WHO 1992c). In Bangladesh, for example, although the total fertility rate declined by one-third and child mortality by almost one-half in just over two decades, the maternal mortality ratio remained virtually unchanged (Khan, Farida, and Begum 1986; World Bank 1992d; World Bank 1993b).

As it now stands, most women in the developing world lack ready access to a selection of fertility con-

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1. The maternal mortality ratio is the number of women dying in pregnancy and childbirth per 100,000 live births. It measures the risk women face of dying once pregnant. The maternal mortality rate is the number of women dying in pregnancy or childbirth per 100,000 women age 15-49. The rate reflects both the maternal mortality ratio and the fertility rate.

trol methods and to basic maternity care. Many countries have largely neglected interventions to control other problems to which women are particularly vulnerable, such as sexually transmitted diseases, malnutrition, and gender violence. Moreover, the women's health initiatives that are in place are inadequate and tend to focus on married, child-bearing women. Girls, adolescents, older women, and unmarried or childless women of reproductive age rarely receive the attention of public health administrators.

Women's health status is affected by complex biological, social, and cultural factors that are highly interrelated (Figure 1.1). To reach women effectively, health systems must take into account the biological factors that increase health risks for women and such sociocultural determinants of health as age of marriage and attitudes towards adolescent sexuality, as well as psychological factors, such as depression arising from gender violence. Over the longer term, broader efforts—particularly increased female education—will help reduce many of the barriers to women's health.

#### *Biological determinants of women's health*

Under optimal conditions for both men and women a woman's life expectancy at birth is 1.03 that of men (Coale and Demeny 1983; World Bank 1993c). Many countries show a considerably higher advantage to females; in most industrialized countries their life expectancy is over 1.06 that of men, and as high as 1.10 in Canada. In most developing countries, however, the ratio is much lower, even dropping below one in parts of Asia, to a low of 0.97 in Bhutan—a sign of socioeconomic conditions particularly inimical to women and girls (Keyfitz and Flieger 1990).

While the major health risks related to pregnancy are well known, other health problems associated with women's reproductive biology may be

less recognized. Menstruation, for example, renders women more susceptible than men to iron-deficiency anemia. Certain conditions can be exacerbated by pregnancy, including anemia, protein-energy malnutrition, hepatitis, malaria, tuberculosis, sickle cell disease, diabetes and heart disease. Complications of pregnancy may also cause permanent damage, such as uterine prolapse and obstetric fistulae.

Due to biological factors, women have a higher risk per exposure than men of becoming infected with sexually transmitted diseases including HIV. In addition, because women with sexually transmitted diseases are more likely than men to have no symptoms, they may delay treatment until an advanced stage, with more severe consequences. Human papillomavirus infection results in genital cancer much more frequently in women than in men and is the single most important risk factor for cancer of the cervix. Cancer of the cervix accounts for more new cases of cancer each year in developing countries than any other type of cancer (Parkin et al. 1988). And although women of reproductive age are thought to receive some protection against cardiovascular disease from the hormone estrogen, their risk increases after menopause. By age sixty-five, a higher proportion of women than men die as a consequence of cardiovascular conditions (Lopez 1993).

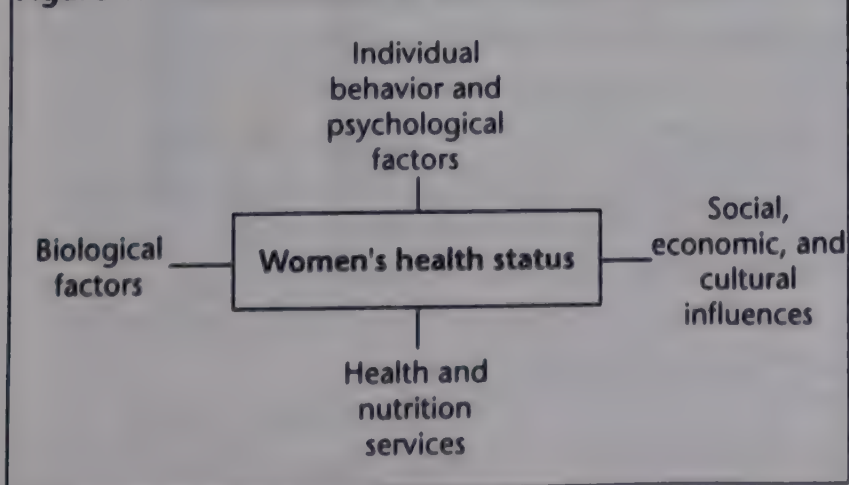
Though the reasons are not well understood, women tend to have fewer injuries than men. The behavior patterns of men, including higher alcohol consumption, place them at a higher risk for most injuries, though biology may also play a role (Stansfield et al. 1993).

#### *Socioeconomic influences on women's health*

The cultural and socioeconomic environment affects women's exposure to disease and injury, their diet, their access to and use of health services, and the manifestations and consequences of disease. Indoor cooking, for example, is one of the most serious occupational health and environmental hazards in the developing world because of the acute and chronic—and sometimes fatal—consequences of inhalation of smoke and toxic gases, as well as accidental burnings (WHO 1986; World Bank 1992d). A study in India found women's exposure to cooking fumes to be equivalent to smoking twenty packs of cigarettes a day (Smyke 1991).

Women's disadvantaged social position, which is often related to the economic value placed on familial roles, helps perpetuate poor health, inadequate

**Figure 1.1: Determinants of women's health status**



diet, early and frequent pregnancy, and a continued cycle of poverty. Parents may invest less in girls because they perceive them to have less economic potential, since girls often become part of another family at marriage and generally earn less income. As a result, from infancy, females in many parts of the world receive less food and food of lower quality and are treated less often when sick, and then only at a more advanced stage of disease. In countries where women are less educated, receive less information than men, and have less control over decision-making and family resources, they are also less apt to recognize health problems or to seek care. Cultural factors, such as restrictions on women travelling alone or being treated by male health care providers, restrict women's use of health services in some Middle Eastern countries, for example.

Women's low socioeconomic status can also expose them to physical and sexual abuse and mental depression. Unequal power in sexual relationships exposes women to unwanted pregnancy and sexually transmitted diseases, including HIV/AIDS. With changing social values and economic pressures, girls are engaging in sexual relationships at an increasingly earlier age. The worst manifestation of this phenomenon is the growing number of young girls forced into prostitution, especially in Asia.

The general level of underdevelopment may pose additional health risks for women. Poor roads and lack of transport, as well as inadequate obstetric facilities, hinder women from receiving timely medical treatment for obstructed labor, hemorrhage, and other pregnancy-related complications. Inadequate water supply, lack of electricity, and poor sanitation impose extra hardships and burdens on women because of their household responsibilities such as fetching water and fuelwood, cooking, and caring for children.

Because women represent a disproportionate share of the poor (UN 1991b), poverty further curtails their access to health services. They have less disposable income to spend on health because their wages for the same or similar work are substantially lower than men's and because much of their work is outside the formal sector and not financially remunerated. Furthermore, because of their multiple tasks and responsibilities, women face high opportunity costs for time spent on health care. Girls begin working at an earlier age than boys and spend more hours working each day (paid and unpaid), throughout their lives, in all regions (UN 1991b). Studies in Kenya and Peru confirm that distance and user fees are a larger obstacle to women

than to men in seeking medical care (Mwabu, Ainsworth, and Nyamete 1993; Gertler and Van der Gaag 1990).

The strongest evidence of gender differentials in health status and use of health services has been documented for both children and adults in South Asia. A study in India found that protein-energy malnutrition was four to five times more prevalent among girls, and yet boys were fifty times more likely to be hospitalized for treatment (Das Gupta 1987). Community-based studies in India found that women had a higher rate of illness and disease than men in the same household, but used health services less often (World Bank 1992d). Studies in other countries also have found that even where there is no apparent gender difference in prevalence, women may be less likely than men to seek care for infectious disease. In Colombia and Thailand, for example, about six times as many adult men as women attend malaria clinics for treatment (Vlassof and Bonilla 1992; Ettling et al. 1989).

### **Widespread Impact of Women's Health**

Improving women's health has significant benefits not only for women but for their children and the national economy. Yet standard cost-effectiveness calculations applied to health interventions generally fail to take these positive externalities into account. Pregnancy care is an exception, however, since the main health benefits included in the cost-effectiveness calculations are derived from improvements in the health of the baby.

#### *Child survival*

To a large extent, the well-being of children depends on the health of their mother. In developing countries, a mother's death in childbirth means almost certain death for a newly born child and severe consequences for her older children. A recent study in Bangladesh of children up to age ten found that a mother's death sharply increases the chances that her children will die within two years, especially her daughters. Children whose mothers die are three to ten times more likely to die within two years than those with living parents (Figure 1.2). A father's death only has a significant effect on the survival prospects of his children between the ages of five and nine, and the impact is just half that of the mother's death (Strong 1992).

When mothers are malnourished, sickly, or receiving inadequate prenatal and delivery care,

their children face a higher risk of disease and premature death. The effect on perinatal outcomes is particularly strong. Each year, seven million infants die within a week of birth and twenty-one million low-birth-weight babies are born. The prospects for many of these babies could be improved by improving women's health and nutrition and providing good maternity care (WHO 1993a; WHO and UNICEF 1992).

Maternal anemia and small pelvic size among women whose growth has been stunted increase the risk of both maternal and infant mortality. Iodine-deficient mothers are at greater risk of giving birth to infants with severe mental retardation and other congenital abnormalities. Pregnancy in early adolescence has additional harmful effects, from low-birth-weight babies to premature cessation of the mother's growth, setting in motion an intergenerational cycle of ill health and growth failure (Figure 1.3). Proper nutrition and health care can interrupt this intergenerational cycle.

#### *Productivity, family welfare, and poverty reduction*

Reducing fertility and improving women's health can improve individual productivity and family well-being and, particularly when combined with education and access to jobs, can also accelerate a nation's

economic development. Women's current contributions are substantial, although only partially reflected in official economic statistics, and their potential is underutilized. Women are responsible for up to three-quarters of the food produced annually in the developing world. In parts of Africa, women produce 80 percent of the food consumed domestically and at least 50 percent of export crops. Women also constitute one-third of the world's wage-labor force and one-fourth of the industrial labor force. Much of women's work—both inside and outside the home—is unpaid and, therefore, not counted. If the gross domestic product included domestic work, it would increase by 25 percent (UN 1991).

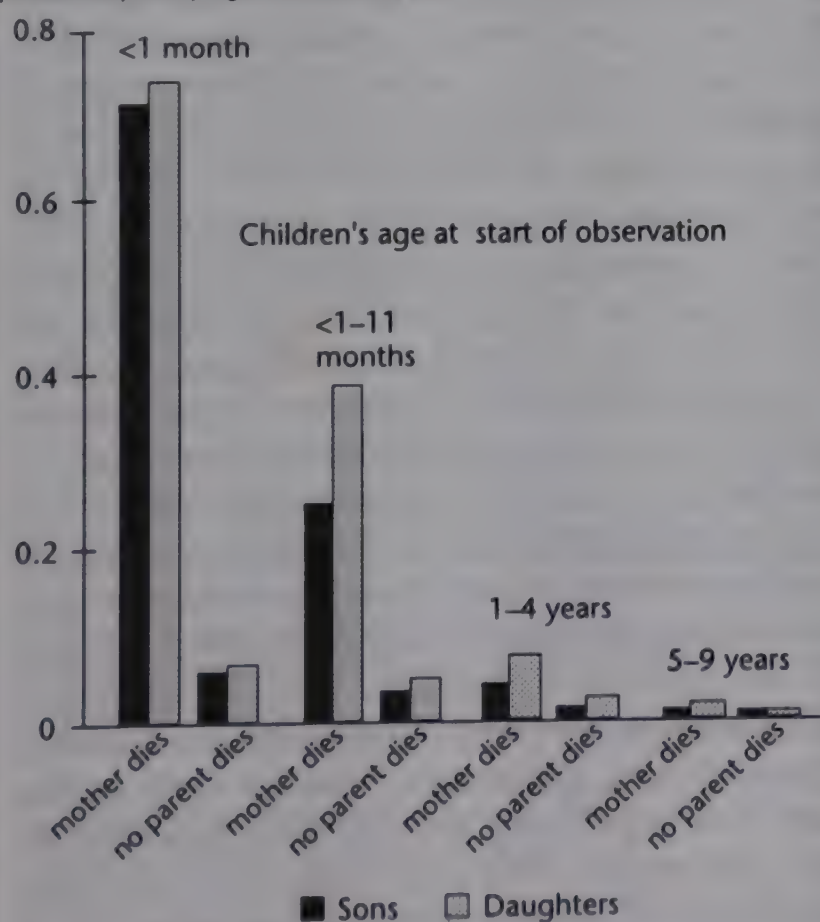
Poor health reduces women's productive capacity to carry out their multiple productive and reproductive responsibilities. Studies of women tea workers in Sri Lanka and cotton mill workers in China, for example, have documented the reduced productivity associated with iron deficiency and the positive effects of iron supplementation on work output (Edgerton et al. 1979 and Ruowei et al. 1994). Frequent pregnancies and poor health not only drain their productive energy, but also contribute to their poverty. A study in one area of India found that the female labor force was reduced 22 percent due to disability. Illness was also found to be the second highest cause of indebtedness in India—affecting women most profoundly since they predominate in the ranks of the poor (Chatterjee 1991).

Women's health is central not only to wage-earning but also to the performance of their many household tasks. Within the family, women bear principal responsibility for maintaining the home and caring for society's dependents—children and the elderly. They collect water and fuel (Tanzanian women, for example, use up to 20 percent of their caloric intake collecting water) cook for and feed the family, and perform other tasks essential to household maintenance.

As the principal providers of family health care, women tend to the sick and disabled and protect chil-

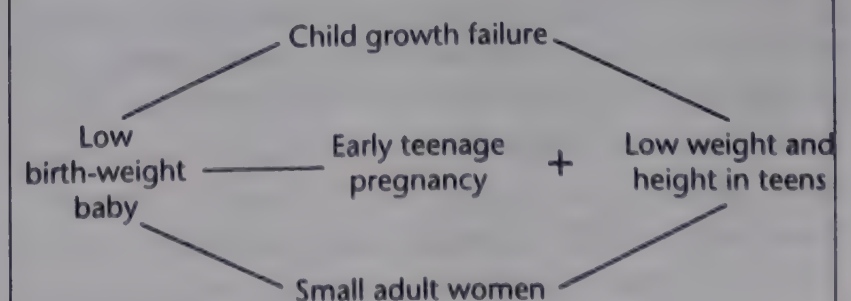
**Figure 1.2: Children's probability of dying rises sharply with their mother's death, Matlab, Bangladesh, 1983–89**

probability of dying within two years



Source: Strong 1992.

**Figure 1.3: Intergenerational cycle of growth failure**



Source: UN/ACC/SCN 1992b.

dren's health. Although not officially recognized as health workers, women are responsible for 70 to 80 percent of all the health care provided in developing countries. Therefore, improving their health status and educating them to prevent and detect infectious diseases and practice proper hygiene and nutrition is a cost-effective approach to improving family health (Leslie et al. 1986). Women's familial responsibilities carry high opportunity costs, reflected in absenteeism from the workforce associated with pregnancy or the caring of sick children, for example.

A woman's health status affects not only the health of her children but also other aspects of their welfare. The preliminary results of a study in Tanzania suggest that a woman's death has an important influence on children's education, particularly at the secondary school level. In households where an adult woman had died within the last 12 months, children spent one-half the time in school than did those where such a death had not occurred. The effect did not appear significant when an adult male died (Over et al. forthcoming).

Women are more likely than men to spend their income on family welfare. In Guatemala, it takes fifteen times more spending to achieve a given improvement in child nutrition when income is earned by the father than when it is earned by the mother (World Bank 1993c).

Evidence suggests that efforts to improve the health and nutritional status of women could be critical to the goal of poverty reduction. The weight of poverty falls more heavily on women. In addition to low health and nutritional status, poor women have low education levels. In the developing world there are only 86 females per 100 males in primary schools, 75 in secondary schools, and 64 in tertiary education. Finally, women have less access to remunerative activities. Evidence from diverse country settings—Burkina Faso, Cameroon, India, Lebanon, Nepal, and the Philippines—suggests that when the time spent on home production is valued, women contribute between 40 to 60 percent of household income (World Bank 1994). Among the poor, women-headed households, especially, are at a greater economic disadvantage than male or joint-headed households because of the lower earnings of women and the dual nature of their work burden, which imposes severe time constraints, restricting their access to social and health services (Rosenhouse 1989). Women-headed households are becoming more prevalent and already represent 20 percent of all households in Africa, Latin America and the Caribbean.

Investing in women's health fits fully within the World Bank's two pronged strategy for poverty reduction, which includes (a) the introduction of broad-based, labor-absorbing economic growth to generate income-earning opportunities for the poor and (b) improved access to education, health care and other social services to help the poor take advantage of these opportunities (World Bank 1994). The adverse effects of ill-health, both on income and on personal and household welfare, are the greatest for the poor. There is evidence that improved health and nutrition reduces infant and child mortality and contributes to demand for smaller families. Smaller family size in turn has a positive impact on poverty by saving household resources. A growing body of research also points to the positive effects of health and nutrition on the labor productivity of the poor (Behrman 1990). To the extent that women are over-represented among the poor, interventions for improving women's health and nutrition are, therefore, critical to efforts for poverty reduction.

### **The Cost-Effectiveness of Women's Health Interventions**

For the major causes of death and disability for males and females by age group in developing countries, there is a greater convergence of relative disease burden and cost-effective interventions for females than for males (Table 1.1). Highly cost-effective interventions—those costing less than US\$100 per disability-adjusted life year saved (DALY)—can benefit more females between the ages of five and forty-four than males in the same age group (Annex B, Table B.2). The health problems of women fifteen to forty-four years old—especially those related to reproduction—are particularly responsive to cost-effective prevention and treatment. For these reasons, many of the interventions included in the *World Development Report* minimum package (Box 1.1) are directed to girls and women, either as beneficiaries or as the means to improve infant health. In low-income countries, for example, one-third of the cost of the recommended minimum package is accounted for by family planning, maternity care, and management of sexually transmitted diseases; in middle-income countries, these interventions account for half of the estimated costs. The Bank recommends that governments ensure that, at the least, poor populations have access to these services. This will require, at a minimum, shifting public spending from services outside the package to those in the package (World Bank 1993c).

**Table 1.1: Major health problems in developing countries with interventions of high to medium cost-effectiveness**

Age group/ main causes of disease burden	Females only	Greater among females	Similar among males and females	Greater among males	Males only
<b>Ages 0-4</b>					
Respiratory infections			High		
Perinatal causes			High		
Diarrheal disease			High		
Childhood cluster*			High		
Malaria			High		
Protein-energy malnutrition			High		
Vitamin A deficiency			High		
Iodine deficiency			High		
STDs and HIV			High		
<b>Ages 5-14</b>					
Intestinal helminths			High		
Childhood cluster			High		
Respiratory infections			High		
Diarrheal disease			High		
Tuberculosis		High			
Malaria			High		
Anemias		High			
STDs and HIV		High			
<b>Ages 15-44</b>					
Maternal Causes	High				
STDs		High			
Tuberculosis			High		
HIV				High	
Depressive disorders		Medium			
Respiratory infections			High		
Anemia		High			
<b>Ages 45-59</b>					
Tuberculosis				High	
Ischemic heart disease				Medium	
Cataracts		High			
Chronic obstructive pulmonary diseases			Medium		
Diabetes mellitus		Medium			
Cancer of the cervix	High				
Malignant neoplasm				High	
<b>Ages 60+</b>					
Ischemic heart disease			Medium		
Respiratory infections			High		
Diabetes mellitus		Medium			
Tuberculosis				High	
Cataracts			High		
Malignant Neoplasms - trachea, bronchus, lung				High	

Note: The causes of disease burden shown here have been chosen from the ten main causes of disease burden among women and the ten main causes among men on the basis of availability of an intervention of high or medium cost-effectiveness. A cause of disease is considered to be greater among females if the ratio of female to male burden of disease is 0.8 or less. Males and females are considered to be equally affected by a disease if the ratio of female to male burden of disease is between 0.8 and 1.2.

Cost-effectiveness valuations:

High - <\$100/DALY saved

Medium - \$100-\$999/DALY saved

\*Vaccine-preventable diseases of childhood.

Source: World Bank 1993c.

An analysis of the eighteen most cost-effective interventions that affect the leading causes of death and disability for both sexes found that childhood interventions have similar benefits for males and females. Men can benefit more than women from the treatment of tuberculosis after age fifteen and for prevention of conditions related to tobacco and alcohol consumption after age forty-five. From age five onward, however, females benefit more than males from the prevention and treatment of sexually transmitted diseases and iron-deficiency anemia. In addition, women derive substantial benefits

from interventions that target health problems exclusive to women, such as maternity-related problems or cervical cancer.

In sum, improvements in women's health increase personal and family well-being and productivity today and help to ensure healthier generations tomorrow. National economies, communities, and households—all of them highly dependent on women's paid and unpaid labor—benefit from investment in women's health. Improving women's health is a critical component of sustainable economic growth.

### Box 1.1: *World Development Report 1993, Investing in Health*

Assessments of the relative importance of different health problems are usually based on how many deaths they cause. Many health problems, however, are not fatal, but cause much disability. As part of background work for the *World Development Report 1993*, the World Bank, in collaboration with WHO, carried out a comprehensive analysis of the amount of both premature death and disability due to specific diseases and injuries. The burden of disease presented in the report was measured in terms of disability-adjusted life years (DALYs). The burden of disease measures the present value of the future stream of DALYs lost as a result of death, disease, or injury in 1990. It is based on events (premature death or new cases of disability) that occurred in 1990 but includes future disability-adjusted life years. Calculation of disease burden was based on several assumptions: disability weights (to value the severity of an illness relative to loss of life), discounting (to value future years of healthy life relative to the present), and age weights (to give years lost at different ages different relative values). Disease burden was calculated for over 100 causes of ill health by age, sex, and region. Preliminary results of the disease burden assessment appear in the *WDR 1993*. A full accounting will be published jointly by WHO and the World Bank.

Disease burden estimates can be used to monitor global and country-level progress in improving health and, in combination with information on cost-effectiveness, to help set priorities for the health sector.

Using this method, the World Bank assessed the costs and benefits of a wide range of health inter-

ventions to determine which were the most cost-effective. Based on this analysis, it proposed a minimum package of essential health services which included:

- *Public health services*—immunization, school health, AIDS prevention, tobacco and alcohol control, and other public health programs (including family planning, health, and nutrition information).
- *Clinical services*—short-course chemotherapy for tuberculosis, management of the sick child, prenatal and delivery care, family planning, treatment of sexually transmitted diseases, and limited care for adults.

Where instituted, this minimum package, which is estimated to cost US\$12 per capita in low-income countries and US\$22 per capita in middle-income countries, could reduce the burden of disease in low-income countries by more than 30 percent and about 15 percent in middle-income countries. Public finance is needed to ensure the availability of public health interventions to the population, given that such services are so nearly public goods that private markets will provide too little of them. Governments must also finance clinical services in the minimum package for the poor. In middle-income countries, where resources are much less constrained than in low-income countries, additional public expenditure can either go to extending coverage to the non-poor or to expansion beyond the minimum package to a national package of health care that includes somewhat less cost-effective interventions against a larger number of diseases and conditions. This would further improve women's access to services.

# An Overview of Women's Health and Nutrition

Women are much healthier in some countries than in others. Their health may even vary widely among different regions of the same country. What makes the difference are such factors as the local prevalence of disease, health-related behaviors, women's educational attainment, exposure to health information, their influence on decision-making, and the availability of health care in general and to women in particular. Poverty, environmental degradation, civil conflict, and migration also influence women's health, if less directly.

## Global Trends

In the developing world, women's health status is changing in response to several emerging trends:

- *More education.* Girls who have attended school, especially through the secondary level, are more likely to adopt healthy behaviors such as delayed marriage and childbearing, smaller family size, use of health care facilities, and appropriate child health care (Schulz 1989).
- *Later marriage.* In most countries, women are marrying later. Later marriage generally implies postponed childbearing and permits women to stay in school longer. It also implies that growing numbers of adolescent girls are exposed to the risks associated with premarital sexual intercourse, including unwanted pregnancy, and sexually transmitted diseases, including HIV. In many countries the proportion of unmarried adolescents becoming pregnant is at an all-time high (Westoff and Ochoa 1991).
- *Emergence of HIV/AIDS.* The rate of HIV/AIDS infection is accelerating rapidly among women, through exposure to infected partners. Young women are at particular risk. Women fifteen to twenty-five years old now account for 70 percent of HIV infections among females worldwide (UNDP 1993).

- *Smaller families.* Women are spending less time in reproduction. In developing countries with relatively low fertility rates, such as Indonesia and Mexico, the average woman spends fifteen years between her first and last birth, or less than 20 percent of her lifetime. In countries with higher fertility and lower life expectancy, such as Kenya and Senegal, the average interval is nineteen to twenty years, or about 40 percent of a woman's lifetime. Comparable intervals are eight years for the United States and two years for Japan (Freedman and Blanc 1991).
- *Longer life expectancy.* Life expectancy at birth has increased, primarily because of improved survival of infants and young children. As a result, health problems that emerge later in life, such as cervical and breast cancer, as well as cardiovascular disease, are becoming more prevalent, shifting health care concerns to those associated with chronic diseases, for which health interventions tend to be less effective and more costly. Women constitute a majority of the elderly.
- *Increased labor force participation.* Women are entering the formal labor force in growing numbers. Along with the positive benefits of increased income and, in some settings, social support, women are facing possible new occupational health hazards, and the challenge of coordinating employment outside the home with such traditional responsibilities as breastfeeding and childcare.

## Women's Burden of Disease

Because women live longer than men, the common belief is that they are healthier. In reality, women are more likely to experience sickness and chronic poor health than are men. A recent study by the Rand Corporation concluded that even though women live longer, they are more sickly and disabled than men throughout the life cycle. The study, which

compared measures of ill health in Bangladesh, Jamaica, Malaysia, and the United States, found that women have more problems with physical functioning and general health than do men. Women's health problems begin earlier in life and persist longer into old age, with the result that women suffer more from both acute and chronic nonfatal diseases (Strauss et al. 1992).

Data from the *World Development Report 1993* indicate that between the ages of fifteen and forty-four and after age sixty, men generally have higher rates of premature death and women have higher rates of disability (Figure 2.1). Female disability is especially high in Asia, Sub-Saharan Africa, and the Middle East, much of it attributable to maternal causes, sexually transmitted diseases, and gender-based discrimination (World Bank 1993c).

In developing countries, one-third of the DALYs lost by women aged fifteen to forty-four result from reproductive health problems (pregnancy-related complications, sexually transmitted diseases, HIV, and genito-urinary problems), with gender violence and rape accounting for an additional 5 percent (World Bank 1993c). More than one-fifth of the DALYs lost by women aged forty-five to fifty-nine can be attributed to conditions that exclusively or predominantly affect women. While the potential gains from health interventions targeting women over forty-five years of age are more modest than those applied in earlier years, certain inter-

ventions, such as screening and cryotherapy for preinvasive cervical cancer, are highly effective and relatively cheap.

### Women's Health and Nutrition throughout Life

Biological and social factors affect women's health throughout their lives and have cumulative effects. That makes it important to consider the entire life cycle when examining the causes and consequences of women's poor health. For example, girls who are fed less than other household members during childhood may have stunted growth, leading to higher risks of complications during childbirth; sexual abuse or female genital mutilation during childhood increase the likelihood of poor physical and mental health in later years. While the adolescent period overlaps with the reproductive years, it is considered separately because of the long-term consequences of behaviors and health treatment initiated during this period (Figure 2.2).

Different health and nutrition problems affect females at different stages of the life cycle, from infancy and childhood, to adolescence and the reproductive years, to the post-reproductive period (for more detail see Annex B). For developing countries as a whole, 25 percent of females are zero to nine years old, 21 percent are ten to nineteen years, 36 percent are twenty to forty-five years, and 18 percent are over the age of forty-five.

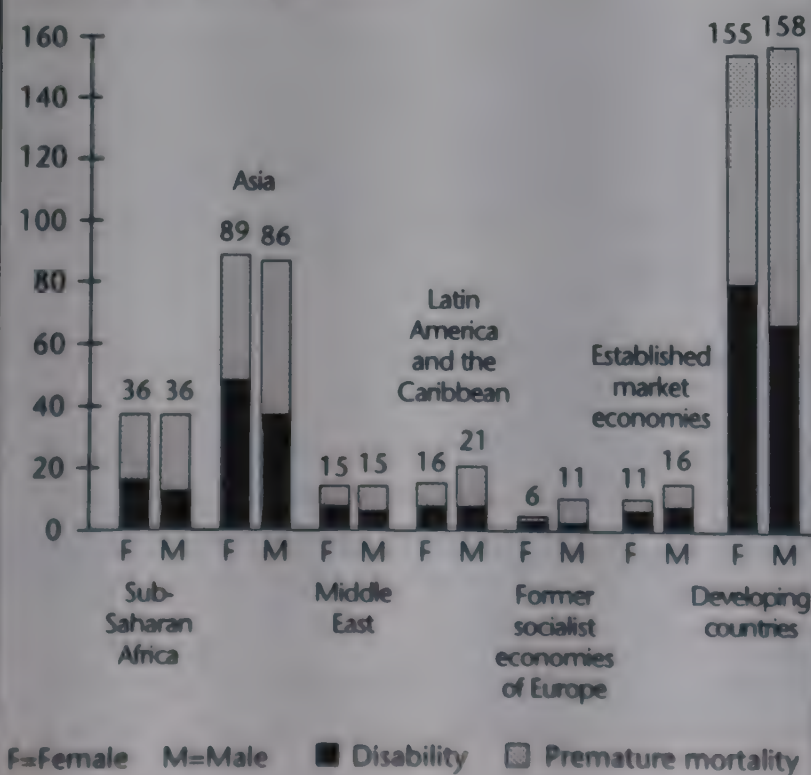
#### Infancy and childhood

✓ Discrimination in the care of girls can negate their innate biological advantage relative to boys. In many developing countries, girls are in poorer health than boys because of inadequate nutrition and health care. Such disparities are greatest in India and China, where more girls than boys die before their fifth birthday, despite girls' biological advantage (World Bank 1993c). Key factors that adversely affect girls' health include:

✓ *Discriminatory childcare.* In societies where boys are more highly valued than girls, boys may receive more preventive care and more timely attention when they fall ill. In some societies, girls receive less food and less nutritious food than boys (Ravindran 1986), leading to malnutrition and impaired physical development and laying the groundwork for future health problems.

**Figure 2.1: Burden of disease by region for females and males aged 15 to 44 in 1990**

DALYs lost per 1,000 population



Source: World Bank 1993c.

- **Sex selection.** In countries where many families have a strong preference for sons, there is evidence of selective abortion of female fetuses (whose sex is detected by ultrasound and amniocentesis) and female infanticide (Heise et al. 1993). In Bombay, India, only one of 8,000 abortions performed after parents learned the sex of the fetus averted the birth of a male (United Nations 1991b).
- **Genital mutilation.** Each year an estimated two million young girls, mostly between four and eight years of age, are subjected to genital mutilation, also known as female circumcision. Often performed under unsterile conditions, this invasive procedure can lead to death, acute and chronic disability, including recurrent urinary tract infections, mental trauma and painful intercourse, and complications during childbirth (Acsadi and Johnson-Acsadi 1993; WHO 1993b) (Box 3.2).

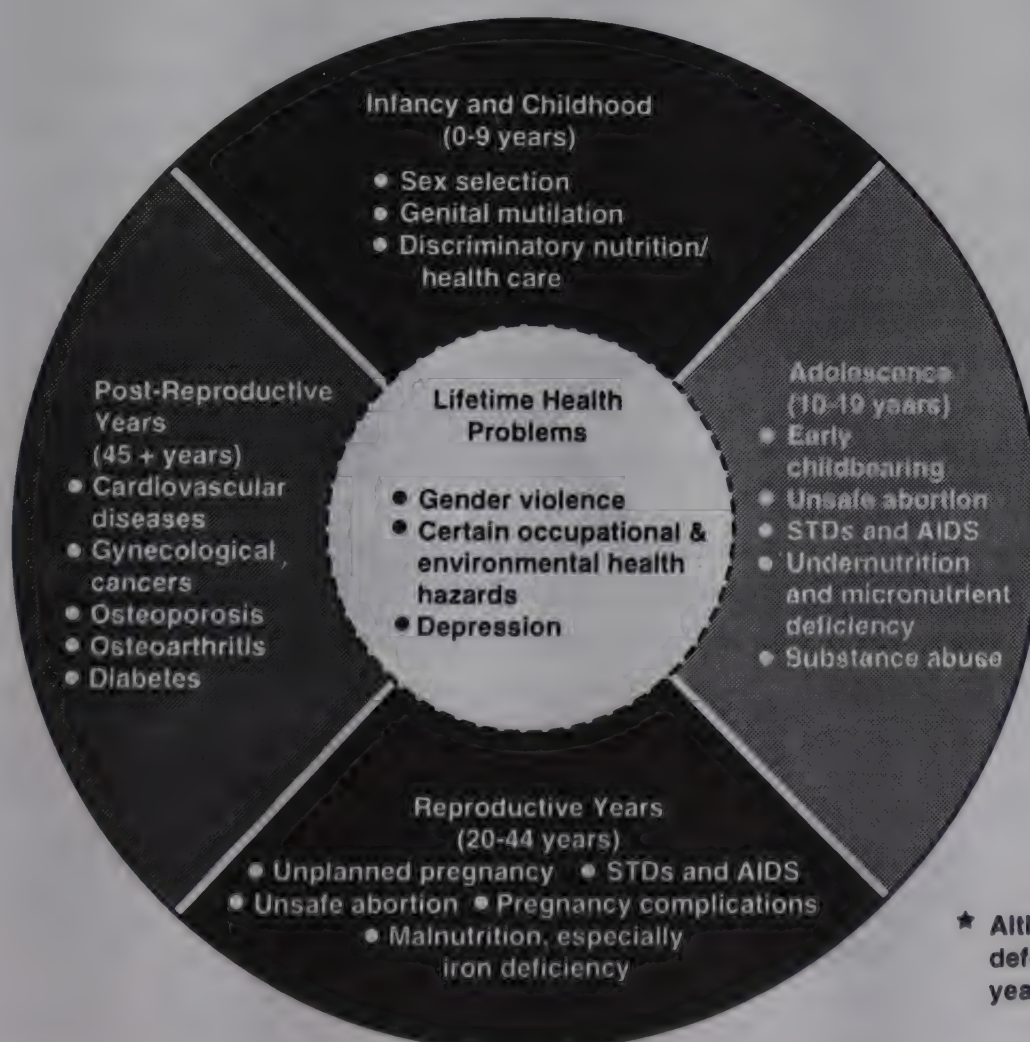
### Adolescence

Although women ten to nineteen years old are generally free of disease, their emerging sexuality and

exposure to a variety of risks during the transition from childhood to adulthood can jeopardize their survival and well-being. Their status within the family and community is at its lowest in most countries during this part of the life cycle. To a large extent, adolescence sets the stage for health and nutritional status in the later years, yet health policies and programs are the least effective in addressing the needs of this age group.

- **Early childbearing.** The proportion of women giving birth during their teenage years ranges from 10 to 50 percent depending on the country. While early childbearing is particularly common in traditional, often rural, settings, where early marriage is the norm, it is becoming increasingly prevalent among unmarried adolescents. In some settings, a young girl may welcome an early premarital pregnancy to demonstrate her fertility or to motivate a partner's marital commitment. Premarital pregnancy can have harmful effects on a girl's social and economic opportunities. In Botswana, for example, a national study found that one in seven women who dropped out of school did so because of preg-

**Figure 2.2: Health and nutrition problems affecting women exclusively or predominantly during specific stages of the life cycle**



★ Although the reproductive age group is defined as 15-44 years, the period 15-19 years is included here under adolescence

nancy and, of those who left, only one in five returned to school (Bledsoe and Cohen 1993). In societies where premarital sexuality is condemned, early pregnancy carries a social stigma and can have particularly acute adverse consequences. Regardless of their marital status, teenage mothers face a high risk of serious pregnancy-related complications and at least a 20 percent greater likelihood of maternal or infant death than women in their twenties. The risks increase severalfold for women under age sixteen. Adolescent girls are not physically prepared for childbirth, since linear growth is not complete until the age of eighteen and the birth canal does not reach mature size until about two to three years later (UN/ACC/SCN 1992a).

- **Unsafe abortion.** Many unmarried adolescents seek abortions—whether legal or not—to avoid expulsion from school and social condemnation. Because they often seek clandestine abortions and delay in obtaining the procedure and seeking medical attention for associated problems, adolescents have a higher rate of abortion complications.
- **Sexually transmitted diseases, including AIDS.** Sexually transmitted diseases, including AIDS, are spreading rapidly among young women, mainly through prostitution and liaisons with older men. There is evidence that adolescent girls are biologically more vulnerable to contracting these diseases than older women, and they are likely to have more difficulty negotiating safe sex practices with their partners. In parts of Africa, HIV infection is increasing more rapidly among females than males, especially among adolescent girls (Panos Institute 1989). On average, women become infected five to ten years earlier than men (UNDP 1993).
- **Undernutrition and micronutrient deficiency.** Girls' nutritional needs increase in early adolescence because of the growth spurt associated with puberty and the onset of menstruation. Inadequate diet during this period can jeopardize their health and physical development, with lifelong consequences. A very common condition is iron-deficiency anemia.
- **Increased substance abuse.** Adolescents often experiment with harmful substances, including tobacco products, alcohol, and drugs. While diseases associated with lifestyle and behavior have been less of a problem for women than for men, this pattern is changing in some countries. Cigarette advertising in developing countries is

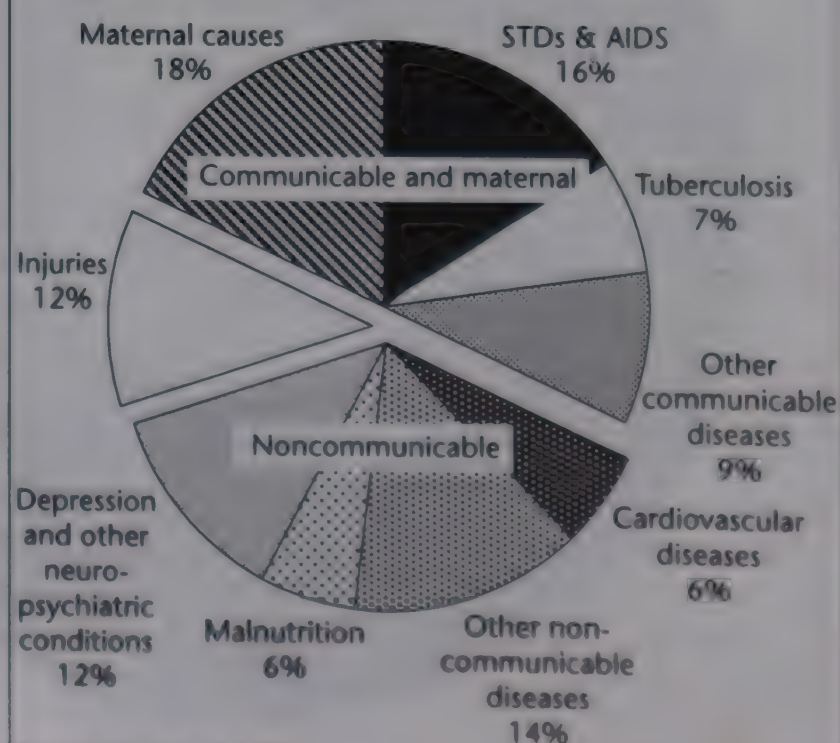
now targeting women and young people, and smoking is spreading most rapidly among young women. Early initiation of such behaviors sets a pattern for lifelong use and increases morbidity and mortality, including risks specific to women's reproductive functions.

### Reproductive years

Women's risk of premature death and disability is greatest during their reproductive years (see Figure 2.3 for the distribution of the disease burden in this age group). Many conditions that occur in these years affect the health of women long after their reproductive years are over and the health of their children as well.

- **Unplanned pregnancy and abortion.** Unplanned pregnancy is common in every country. In most developing countries, about 20 to 30 percent of married women wish to avoid becoming pregnant but are not using contraception (Westoff and Ochoa 1991). As a result, one in five births in these countries is unwanted. Worldwide, an estimated forty to sixty million women resort to abortion to end unwanted pregnancy. Since the majority of abortions are performed under unsafe conditions, abortion carries a high risk of injury and death. Unsafe abortion accounts for 125,000 to 200,000 female deaths annually (Dixon-Mueller 1990; Rosenfield 1989; WHO 1992c). The cost of treating abortion-related complications is high—many times greater than the cost of offering safe abortion services.

Figure 2.3: Burden of disease in females aged 15 to 44 in developing countries



Source: World Bank 1993c.

- *Pregnancy-related complications.* Each year, more than 150 million women become pregnant. More than fifty million of them experience acute pregnancy-related complications, and fifteen million develop long-term disabilities (WHO 1992a). Half a million women die in pregnancy or childbirth. The major causes of pregnancy-related deaths include hemorrhage, sepsis, unsafe abortion, hypertensive disorders, and obstructed labor. Conditions such as malaria, viral hepatitis, diabetes, anemia, sickle cell disease, tuberculosis, and rheumatic heart disease are aggravated by pregnancy (WHO 1992a). Disabilities resulting from pregnancy include genital or bladder prolapse, cervical lacerations, obstetric fistulae, anemia, and infertility.
- ✓ • *Malnutrition.* An estimated 450 million adult women in developing countries are stunted as a result of childhood protein-energy malnutrition, which places them at increased risk of obstructed labor (World Bank 1993c). Over 50 percent of pregnant women in the developing world are anemic (WHO 1992c). About 250 million women suffer the effects of iodine deficiency, and, although the exact numbers are unknown, millions are probably blind due to vitamin A deficiency (Leslie 1991). The highest levels of malnutrition among women are found in South Asia (DeMaeyer and Adiels-Tegman 1985) where 60 percent of women of reproductive age are underweight, over 60 percent are anemic, and 15 percent are stunted (UN/ACC/SCN 1992a). Causes of malnutrition include inadequate food supply, inequitable distribution of food within the household, improper food storage and preparation, food taboos, and lack of knowledge about nutritious foods. Malnutrition hampers women's productivity, increases susceptibility to infections, and contributes to numerous debilitating and fatal conditions.
- *Sexually transmitted diseases, including AIDS.* Most reproductive tract infections (RTIs) are sexually transmitted. RTIs are of three types: sexually transmitted diseases, infections such as candidiasis and bacterial vaginosis caused by overgrowth of vaginal organisms, and infections associated with unhygienic practices. RTIs are common in all developing countries. In Egypt, for example, a recent community-based study found that one half of all the women surveyed had one or more RTI (Younis et al. 1993). RTIs can cause pelvic inflammatory disease, infertility, and adverse pregnancy outcomes. Among

sexually transmitted diseases, HIV/AIDS and syphilis may directly result in death. Other sexually transmitted diseases, however, can lead to life-threatening complications such as ectopic pregnancy and cervical cancer. Sexually transmitted diseases are also an important cause of infertility and pain (Fortney 1993). HIV/AIDS, which is primarily transmitted sexually, is spreading rapidly among women, especially in Sub-Saharan Africa, where nearly four million adult women are already infected (WHO 1993c). Women are at greater risk than men of contracting HIV/AIDS because they are more likely to become infected each time they are exposed.

#### *Post-reproductive years*

Most of the problems affecting women after the age of forty-five are chronic. Injuries and infections (particularly tuberculosis) also contribute to women's disability in their later years, as do malnutrition, anemia, and loss of visual acuity. Menopause leads to alterations in the skeletal, cardiovascular, nervous, skin, genitourinary, and gastrointestinal systems and can affect women's capacity to perform everyday activities. Yet the health problems of postmenopausal women continue to be largely ignored. Major health problems among women older than forty-five include:

- *Gynecological cancers.* These may occur during the reproductive years, although they are more prevalent after the age of forty. Cancer of the cervix and breast are the most common. Although cervical cancer can be cured at relatively low cost if detected early, 183,000 women in developing countries die from it every year (Sherris et al. 1993; World Bank 1993c). Breast cancer, which kills 158,000 women in developing countries each year, requires more sophisticated screening and treatment techniques (World Bank 1993c).
- *Cardiovascular and cerebrovascular diseases.* Cardiovascular diseases, including ischemic heart disease, myocardial infarction, and cerebrovascular disease (stroke), are the leading cause of death among adults age forty-five and older in developing countries and represent a higher proportion of the disease burden among women than men in this age group (World Bank 1993c). With the increasing prevalence of risk-producing behaviors among women (such as smoking and alcohol consumption), the incidence of cardiovascular disease is expected to rise.

- **Diabetes.** Among urban women in Asia, the Middle East, and Latin America and the Caribbean, where obesity and inadequate exercise are becoming more common, the prevalence of diabetes mellitus is growing. Diabetes is a major cause of morbidity and can lead to blindness, kidney damage, and damage of lower limbs.
- **Undernutrition.** In the poorer developing countries, chronic malnutrition is common among women, often reflecting a lifetime of inadequate intake of calories, vitamins, and minerals. In times of food shortages, elderly women are often most adversely affected.
- **Osteoporosis.** Worldwide, one in ten women over age sixty has osteoporosis, a process of bone loss that may result in pain, disability, and increased risk of fractures. Osteoporosis is most common in women beyond reproductive age because bone loss rises sharply after menopause. Insufficient calcium, inadequate exercise, smoking, and excessive alcohol consumption are contributing factors.
- **Osteoarthritis.** During and after menopause, women are particularly prone to the development of osteoarthritis, a painful degenerative joint disease. Typically, several joints are affected, and progression of the disease restricts the performance of even routine activities. Repeated trauma to the joints has been identified as a predisposing factor, and obesity (because of its effects on the weight-bearing joints) can exacerbate the condition.

### **Additional Health Problems**

Some health problems that affect both men and women during the life cycle have a disproportionate effect on women because of cultural norms or differences in exposure or access to treatment. Three major types of health problems with differential impact on women are:

- **Gender-based violence.** Although men are victims of street violence, brawls, homicide, and crime, violence directed at women is a distinctly different phenomenon. Men tend to be attacked and killed by strangers or casual acquaintances, whereas women are most at risk at home and from men whom they know. Violence against women also differs in that it tends to be chronic and prolonged rather than acute, is less likely to be reported, is often associated with sexual abuse, and has long-term as well as immediate physical and psychological consequences.

Domestic violence, rape and sexual abuse are widespread in virtually all regions, classes, cultures, and age groups (Box 2.1). Sexual abuse can occur at anytime during the life cycle—studies suggest that an alarming proportion of victims of rape and incest are ten years old and younger. In addition to affecting women's health-seeking behavior (abusive husbands often prevent women from seeking care), gender-based victimization can lead to unwanted pregnancy, infection, miscarriage, gynecological problems, chronic pelvic pain, injury, headaches, asthma, irritable bowel syndrome, and partial or permanent disability. Psychological after-effects include depression, fear, anxiety, fatigue, sleep and eating disorders, sexual dysfunction, and post-traumatic stress disorder. Not infrequently,

#### **Box 2.1: Gender violence through the life cycle**

<i>Phase</i>	<i>Type of violence present</i>
Prebirth	Battering during pregnancy (emotional and physical effects on the women; effects on birth outcome).
Infancy	Female infanticide; emotional and physical abuse.
Girlhood	Genital mutilation; sexual abuse by family members and strangers; forced child prostitution.
Adolescence	Dating and courtship violence; economically coerced sex; sexual abuse in the workplace; rape; forced prostitution; trafficking in women.
Reproductive	Coerced pregnancy (for example, mass rape in war); abuse of women by male partners; marital rape; dowry abuse and murders; partner homicide; psychological abuse; sexual abuse in the workplace; rape; abuse of unmarried and childless women; abuse of women with disabilities.
Elderly	Abuse of widows; elder abuse (in the United States, the only country where data are now available, elder abuse affects mostly women).

Source: Heise 1993

victims of battering and sexual assault attempt suicide (Heise, forthcoming).

Recent World Bank estimates of the global burden of disease indicate that in developed countries, domestic violence and rape are responsible for one out of five healthy days of life lost to women of reproductive age (World Bank 1993c). On a per capita basis, the health burden imposed by rape and domestic violence in the developed and developing world is roughly equivalent, but because the total disease burden is so much greater in the developing world, the percentage attributable to gender-based victimization is smaller (roughly 5 percent). Nonetheless, on a global basis, the health burden posed by gender violence among women of reproductive age is comparable to that of other conditions already high on the world agenda. Reducing violence against women, therefore, would help reduce health care expenditures as well as address this violation of basic human rights.

- *Depression.* While neuropsychiatric problems in general account for a similar proportion of the burden of death and disability among men and women aged fifteen to forty-four, depressive disorders account for 5.8 percent of the burden among women of reproductive age—twice the rate among men (World Bank 1993c). Depression is the single most serious mental problem for women in every age group and has a significant impact on women's well-being and productivity (Paltiel 1993). Based on the harm caused by these illnesses and injuries, the *World Development Report 1993* ranks depressive disorders and self-inflicted injuries fifth and sixth, respectively, among diseases and injuries affecting women

aged fifteen to forty-four (World Bank 1993c). Factors that put women at risk of depression include their inferior status, physical or sexual abuse, infertility, conflicting demands posed by their domestic and income-producing roles, and, particularly among elderly women, isolation.

- *Certain occupational and environmental health hazards.* While men are exposed to many occupational and environmental health hazards, some have particular effects on women. Because many women work in the home, they suffer disproportionately from risks in the household environment caused by inadequate water supply, poor sanitation, and indoor air pollution. Outside the home, women workers may face the risk of sexual harassment and rape. Furthermore, they are more likely than men to work in industries and small enterprises that are poorly regulated, with exposure to unsafe working conditions (with such hazards as toxic chemicals, radiation, extreme temperatures, excessive noise, and violence). When pregnant women are exposed to many of these hazards, the health of their unborn children suffers as well. Heavy work during pregnancy can lead to premature labor and, when high energy demands are not compensated by increased caloric intake, to low-birth-weight babies. Most women in developing countries are employed in low-wage positions such as food vendors, petty traders, and domestic workers; they cannot afford to purchase health care or protective clothing and equipment. Many women farmers, especially those in commercial agriculture, are regularly exposed to pesticides, often without appropriate safeguards.

# Health and Nutrition Interventions for Women

The health, nutrition, and behavioral factors that affect the well-being and productivity of women cover a wide spectrum. Under conditions of limited resources, therefore, policymakers and program planners have to make some difficult decisions about priorities. To provide a rational basis for making such choices, this chapter identifies and describes the women's health interventions that should be priorities for most developing countries. It does the same for a second set of expanded interventions, which can be incorporated in public health and education programs as a country's resources permit. Interventions have been selected on the basis of their impact on female disability and death, their cost, and their feasibility in developing countries (Table 3.1). Though cost-effectiveness estimates are not widely available for education and communication efforts, interventions designed to alter behavior are included here because of their strong potential for influencing the attitudes and practices of women, men, health care providers, and policymakers.

The Essential Services for women's health confer widespread economic and social benefits of sufficient importance and impact to justify funding them with public monies in all countries, if necessary. Many of these interventions relate to women's reproductive and sexual health because unprotected sex, pregnancy, and childbearing—exacerbated by women's subordinate status—are a major cause of poor health among women, beginning in adolescence. Other interventions address unhealthy or harmful behaviors.

The Expanded Services describe interventions that can be implemented by middle-income countries (and poorer countries to the extent that funds permit) to reap even more gains. They focus primarily on expansion and improvement of the Essential Services, interventions for women beyond reproductive age, and behavior change interventions for early prevention of health and nutrition problems

and reduction of gender discrimination and violence. Along with the basic services outlined here, countries are encouraged to expand their health policy dialogue, sector work, and projects aimed at changing attitudes and practices that are detrimental to women's health.

While the two sets of recommended interventions are beneficial to all women, strategies will need to be tailored to the economic, epidemiological, demographic, and infrastructural conditions of each country or local setting. For purposes of exposition, recommendations for health and behavioral interventions are presented separately, though they are often intimately related. The cultural and socioeconomic factors that affect women's lives must also be taken into account when prioritizing interventions and planning delivery strategies. Potentially cost-effective devices for disease prevention, such as condoms, sometimes fail in practice because social mores prevent women from negotiating their use. It is also important to recognize that health and social interventions are generally the province of different agencies, both private and government.

## Essential Health Interventions

Essential health interventions include prevention and management of unwanted pregnancies, pregnancy services, and prevention and management of sexually transmitted diseases (Table 3.2).

### *Prevention and management of unwanted pregnancies*

Preventing unwanted pregnancies improves women's health by reducing their exposure to the complications of pregnancy, childbirth, and unsafe abortion. In addition, the survival chances of children are significantly influenced by the timing and spacing of births as well as by overall family size. Health services can best address the problem of unwanted pregnancy by providing family planning

Table 3.1: Major health problems among females in developing countries and the cost-effectiveness of interventions, 1990

Age group/ main causes of disease burden	Total DALYS lost from all diseases (millions)	Percent of total disease burden for each age group	Cost- effectiveness of existing interventions*	Cost per DALY saved	WDR essential package	Women's Essential Services	Women's Expd. Services
<b>Ages 0-4</b>	<b>250</b>						
Respiratory infections		18.5	High	\$20-50	o		
Perinatal causes		17.2	High		o		
Diarrheal disease		16.2	High	\$10-170	o		
Childhood cluster**		10.7	High	\$10-25	o		
Congenital problems		6.5	Not yet evaluated				
Malaria		4.7	High		o	o	
Protein-energy malnutrition		2.4	High	\$63	o		o
Vitamin A deficiency		2.3	High	\$1-4	o		o
Iodine deficiency		1.3	High	\$8-37	o	o	
Falls		1.2	Not yet evaluated				
<b>Ages 5-14</b>	<b>67</b>						
Intestinal helminths		12.3	High	\$15-30	o		
Childhood cluster		8.6	High	\$10-25	o		
Respiratory infections		7.9	High		o		
Diarrheal disease		7.1	High		o		
Tuberculosis		5.7	High	\$3-5	o		
Malaria		4.9	High	\$5-250	o		
Motor vehicle injuries		3.7	Not yet evaluated				
Anemias		3.0	High		o	o	
Epilepsy		2.6	Not yet evaluated				
STDs and HIV		2.4	High	\$3-5	o	o	
<b>Ages 15-44</b>	<b>155</b>						
Maternal Causes		18.0	High	\$60-110	o	o	o
STDs		8.9	High	\$10-15	o	o	
Tuberculosis		7.0	High	\$3-5	o		
HIV		6.6	High	\$3-5	o	o	
Depressive disorders		5.8	Moderate				
Self-inflicted injuries		3.2	Not yet evaluated				
Respiratory infections		2.5	High		o		
Anemia		2.5	High	\$4-13	o	o	
Osteoarthritis		2.2	Not yet evaluated				
Motor vehicle injuries		2.1	Moderate				
<b>Ages 45-59</b>	<b>49</b>						
Cerebrovascular diseases		8.7	Low				
Tuberculosis		5.6	High	\$3-5	o		
Ischemic heart disease		4.7	Moderate				
Peri-, endo- and myocarditis		3.2	Not yet evaluated				
Periodontal disease		3.1	Not yet evaluated				
Cataracts		3.1	High	\$20-40			
Chronic obstructive pulmonary diseases		2.8	Moderate				
Diabetes mellitus		2.8	Moderate				
Osteoarthritis		2.7	Not yet evaluated				
Cancer of the cervix		2.6	High	\$150-200			o
<b>Ages 60+</b>	<b>60</b>						
Cerebrovascular diseases		16.5	Low				
Ischemic heart disease		11.6	Moderate				
Chronic obstructive pulmonary diseases		8.1	Moderate				
Alzheimer's disease and other dementias		4.8	Not yet evaluated				
Respiratory infections		4.6	High				
Peri-, endo- and myocarditis		3.6	Not yet evaluated				
Diabetes mellitus		2.4	Moderate				
Tuberculosis		1.9	High	\$3-5	o		
Falls		1.8	Not yet evaluated				
Cataracts		1.6	High				

\* Interventions of high cost-effectiveness are those that can be implemented for less than \$100 per DALY saved; those of moderate cost-effectiveness cost between \$250 and \$999 per DALY saved; and those of low cost-effectiveness cost more than \$1,000 per DALY saved. (Few interventions are in the range of \$100 and \$250 per DALY saved). "Not yet evaluated" indicates diseases for which preventive and therapeutic interventions have not been evaluated in terms of cost-effectiveness.

\*\*Vaccine-preventable diseases of childhood.

Source: World Bank 1993c

services and—where national policies permit—safe services for termination of pregnancy.

**Family planning services.** Where fertility and mortality rates are high, family planning alone can have a substantial impact on maternal mortality rates. For example, in a rural subdistrict of Bangladesh, the maternal mortality rate fell by a third following an effective community-based project that raised contraceptive prevalence to more than 50 percent (as compared with 23 percent in the control area) (Fauveau 1991). Providing family planning services costs, on average, only US\$15 to US\$150 per DALY saved in low-income countries (about US\$20 per contraceptive user) and is one of the most cost-effective health interventions. In countries where both mortality and fertility are still relatively high, the cost per child-death prevented is also extremely low. In Mali, for example, it averages about US\$130, or US\$4 to US\$5 per DALY gained (World Bank 1993c).

To ensure effective and sustained contraceptive use, programs should provide high-quality, consumer-oriented family planning services that promote informed reproductive choice. Because contraceptive needs and preferences change over a woman's lifetime, a good selection of short- and long-term methods (including voluntary sterilization for people who want no more children) should be pro-

vided. Health agencies can ensure that a range of safe, effective contraceptive methods are readily available and affordable by establishing a variety of service-delivery points and encouraging commercial outlets to offer contraceptives at reasonable cost. Condoms, oral contraceptives, and spermicides can be made available immediately, even in resource-poor settings, since they can be provided by community-based distributors with appropriate training and sold through commercial outlets. Trained paramedical workers (nurses and midwives) can safely provide most other methods—including injectables, implants, IUDs, and voluntary sterilization. Where regular supply, recurrent costs, and ensuring continued availability and use present obstacles (which is often the case in resource-poor settings), women may find long-acting methods (IUDs and injectables) may provide an effective alternative to short-term methods.

Breastfeeding also plays an important role in child-spacing and can complement other family planning methods. During the first six months after giving birth, a woman who is amenorrheic (having no menses) and feeding her baby only breastmilk receives 98 percent protection against pregnancy (Georgetown University 1990). Infant health also benefits from exclusive breastfeeding for the first six months and breastmilk supplemented with other food for up to two years. Health workers at all levels

**Table 3.2: Essential Services for women's health**

<i>Essential health interventions</i>	<i>Essential behavior change interventions</i>
<b>PREVENTION AND MANAGEMENT OF UNWANTED PREGNANCIES</b> <ul style="list-style-type: none"> <li>• Family planning</li> <li>• Management of complications from unsafe abortion</li> <li>• Termination of pregnancy</li> </ul>	<b>PROMOTION OF POSITIVE HEALTH PRACTICES</b> <ul style="list-style-type: none"> <li>• Delayed childbearing among adolescents</li> <li>• Safe sex</li> <li>• Adequate nutrition</li> <li>• Increased male support</li> </ul>
<b>PREGNANCY SERVICES</b> <p><i>Prenatal care</i></p> <ul style="list-style-type: none"> <li>• Prompt detection, management and referral of pregnancy complications</li> <li>• Tetanus toxoid immunization</li> <li>• Iron and folate supplements</li> <li>• Iodine supplements, where iodine deficiency disorder is endemic</li> <li>• Malaria prophylaxis in endemic areas</li> </ul> <p><i>Safe delivery</i></p> <ul style="list-style-type: none"> <li>• Hygienic routine delivery</li> <li>• Detection, management and referral of obstetric complications</li> <li>• Facility-based obstetric care</li> </ul> <p><i>Postpartum care</i></p> <ul style="list-style-type: none"> <li>• Monitoring for infection and hemorrhage</li> </ul>	<b>ELIMINATING HARMFUL PRACTICES</b> <ul style="list-style-type: none"> <li>• Public education and services to discourage gender discrimination, domestic violence, and rape</li> <li>• Public education to discourage female genital mutilation</li> </ul>
<b>PREVENTION AND MANAGEMENT OF SEXUALLY TRANSMITTED DISEASES</b> <ul style="list-style-type: none"> <li>• Condom promotion and distribution</li> <li>• Prenatal screening and treatment for syphilis</li> <li>• Symptomatic case management</li> <li>• Screening and treatment of commercial sex workers</li> </ul>	

should encourage mothers to breastfeed and consume an adequate diet to meet the added nutritional demands it implies.

Making contraceptives widely available can greatly reduce the incidence of unsafe abortion. In Santiago, Chile, for example, deaths and hospitalization for complications from abortion fell dramatically after free IUD insertions were offered in 1964. As contraceptives became increasingly available throughout Chile, abortion-related deaths and complication rates plummeted (Figure 3.1). Safer abortion, although still illegal, may also have contributed to this result.

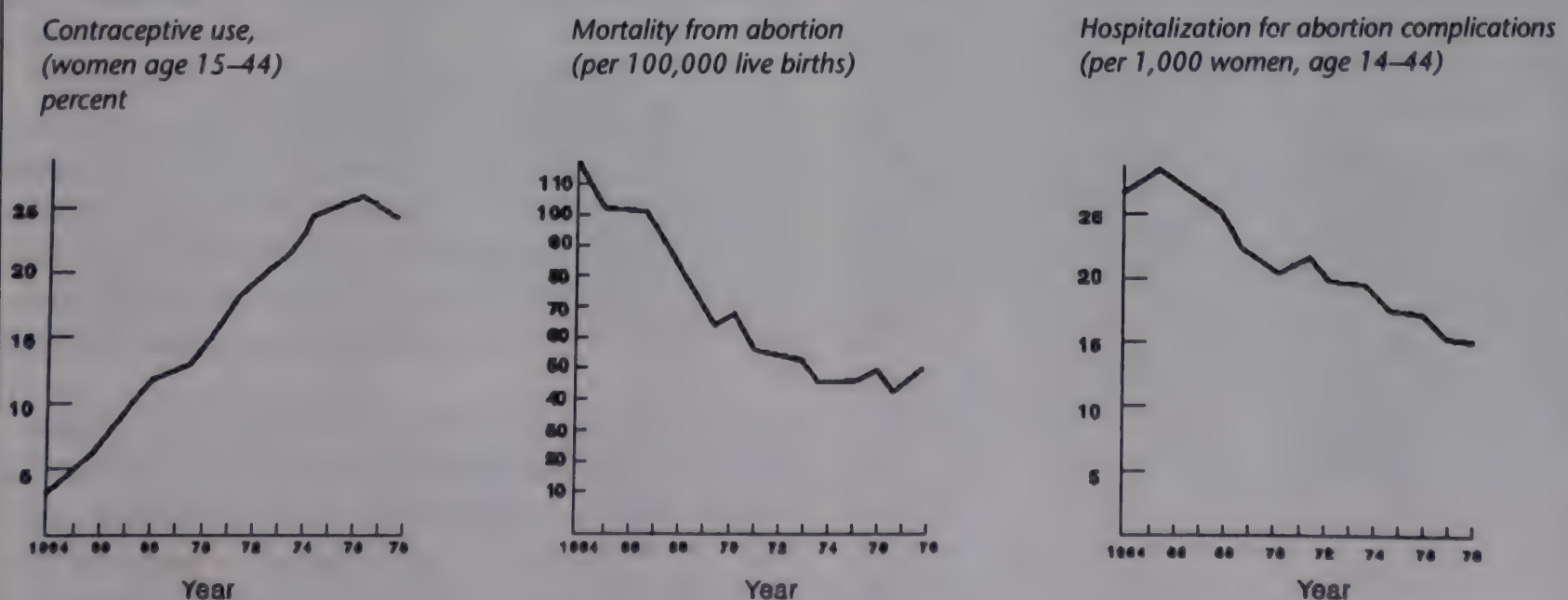
*Management of complications from unsafe abortion and safe services for pregnancy termination.* Women's health care can be greatly improved by timely and appropriate treatment of abortion complications, as well as providing postcoital contraception and safe termination of pregnancy. Complications from unsafe abortion (hemorrhage, shock, and sepsis) are often life-threatening and costly to treat, requiring emergency referral, two to three days of hospital care, anesthesia, antibiotics, surgery, and blood transfusion. Vacuum aspiration abortion, provided by a trained health worker early in pregnancy, for example, is up to a thousand times safer than the clandestine abortion to which women are often forced to resort (Johnson et al. 1992). Safe abortion is one of the most cost-effective measures for reducing maternal death and disability.

Abortion during the first trimester and treatment of incomplete abortion without complications can

be handled safely at primary-level health centers on an outpatient basis by trained nurses, midwives, or paramedics using vacuum aspiration (McLaurin et al. 1991; Rosenfield 1992). Dilation and curettage requires more surgical skill and anesthetic support. Health facilities that provide abortions or treat complications arising from unsafe abortions can realize substantial savings by using vacuum aspiration. In one year, a single Kenyan hospital saved an estimated US\$300,000—equal to the annual salaries for 200 nurses—by switching from dilation and curettage to vacuum aspiration to treat incomplete abortions (Kizza and Rogo 1990). Reducing the incidence of incomplete abortions would lower hospital costs even more. Following an abortion, women should receive counseling, services, and referrals as needed to ensure they have the means to prevent unwanted pregnancy in the future.

Where abortion is legal but not widely available (as in India), programs should strive to increase access to safe abortion by delegating responsibility, training mid-level providers, and expanding the reach of services. In areas where abortion is routinely used for birth control (as in parts of Eastern Europe and Central Asia), programs need to increase the availability of contraceptives and to provide post-abortion family planning information and services. Offering abortion or menstrual regulation as part of more comprehensive services often increases the use of broader reproductive health services. In rural Bangladesh, for example, attendance at reproductive health clinics that offer these services has been growing by 15 percent annually (Kay et al. 1991).

Figure 3.1: Rates of contraceptive use, abortion mortality, and hospitalization for abortion complications, Chile, 1964–78



Source: Adriasole et al. 1986.

*Pregnancy services*

Safe pregnancy services are designed to ensure timely detection, management, and referral of complications during pregnancy, labor, and delivery. About one in three pregnancies develop complications requiring treatment from a trained provider, and one in ten pregnancies require hospitalization. (A more detailed discussion of pregnancy-related services can be found in Tinker et al. 1993a).

Because of their impact on the health of the child as well as the mother, safe pregnancy services are highly cost-effective. Providing prenatal, delivery, and postpartum services costs less than US\$2,000 per death averted, or between US\$30 and US\$250 per DALY saved (World Bank 1993c).

In resource-poor countries, priority should be given to improving hygienic practices, providing iron and folate supplementation, and strengthening linkages and referral services for obstetric complications. In the former socialist economies of Europe and Asia, preventive, client-centered, and updated practices are likely to have the greatest payoff. In parts of Latin America where the health infrastructure is relatively extensive, improving the quality of obstetric care and discouraging inappropriate medical practices (such as excessive use of cesarean sections) are likely to take priority.

*Prenatal care.* Regular prenatal care is needed to help detect and manage some pregnancy-related complications (such as pre-eclampsia, infection and obstructed labor) and to educate women about danger signs, potential complications, and where to seek help. In Ethiopia and Nigeria, nurse-midwives working with traditional birth attendants referred women of short stature having their first birth to the hospital for delivery. This substantially reduced the number of maternal deaths from obstructed labor. Prenatal care is also an opportunity to provide preventive care that will benefit the infant as well as the mother (such as counseling on hygiene, breastfeeding, nutrition, family planning, tetanus toxoid immunization, and iron/folate supplementation) and to treat existing diseases that may be aggravated by pregnancy (such as malaria). Women who develop life-threatening pregnancy complications must be able to reach first-level referral centers. Unfortunately, there is no established protocol for either the content or the timing of prenatal care. This is an issue of concern for any maternal health and safe motherhood program and deserves the

immediate attention of the health community as well as policy makers.

Because most pregnancy-related complications cannot be anticipated, all women need access to appropriate care should complications develop. In Ethiopia, for example, maternity waiting homes have been established near hospitals to bring women living in remote areas to obstetric care before the expected due date, if transport will be difficult from their homes to the hospital (Brennan 1991; Poovan, Kifle, and Kwast 1990).

Because newborns and mothers can contract tetanus from nonsterile delivery procedures, immunization against tetanus is especially important for women who deliver in nonmedical settings. Immunizing pregnant women against tetanus costs less than US\$6 per DALY saved, based on infant deaths averted (Jamison 1993).

The regular intake of iron and folate tablets can prevent or cure anemia among pregnant and lactating women. Providing iron supplementation for pregnant women is highly cost-effective, at a delivery cost of less than US\$2 to US\$4 per person annually, or less than US\$13 per DALY saved, based on infant deaths averted (World Bank 1993c). Iron pills should be provided routinely to pregnant women and properly stored to protect quality. Pills can also be made available through community-based distribution and commercial outlets. Health care provider training and consumer education can improve patient compliance. Fortification of commonly used foods (salt or sugar) with iron, iodine, and vitamin A is even more cost-effective than supplementation.

Where iodine deficiency is endemic, providing iodized oil to women of reproductive age is a low-cost addition to existing maternal and child health services, particularly where iodized salt is not available. However, the most effective long-term approach to reducing iodine deficiency is iodization of salt for the whole community. Iodine supplementation can reduce mental retardation in infants and increase women's work capacity. Use of injected or oral iodized oil every two to five years among women of reproductive age costs less than US\$19 per DALY saved, based on child-deaths averted (World Bank 1993c).

At about the fourteenth week of gestation, especially in a first pregnancy, women's resistance to malaria begins to diminish. While providing bed nets and antimalarial drugs to pregnant women in endemic areas can prevent severe illness and reduce the associated risk of low-birth-weight infants (Steketee 1989), prompt diagnosis and proper treat-

ment of malaria during pregnancy may be the most cost-effective course of action.

*Safe delivery.* Delivery care should include safe management of routine deliveries, safe-birth kits for traditional birth attendants, communication and transport to ensure timely referral and management of emergency complications, and essential obstetric functions at the first referral level.

Health agencies should be able to ensure hygienic routine delivery in the community by trained paramedics, particularly midwives, or traditional birth attendants. Most postpartum hemorrhage, which is largely unpredictable, can be prevented if skilled birth attendants effectively manage the third stage of labor. Sepsis at delivery can be largely prevented by minimizing vaginal examinations and ensuring clean delivery practices. When rupture of the membranes occurs long before labor, antibiotics should be provided.

Most life-threatening complications occur during labor and delivery, and since most of these cannot be predicted, every woman needs access to emergency obstetric care. Effective treatment of hemorrhage often includes rapid manual removal of retained placenta, oxytocic drugs, intravenous fluids, blood transfusion, and surgery. In cases of hemorrhage, obstructed and prolonged labor, hypertensive disorders such as eclampsia, and other obstetrical emergencies, the most important element in a woman's treatment may be transportation. Death from hemorrhage, for example, usually occurs within two hours of onset. When distance is a factor, first aid at the community or health center level may be necessary to stabilize a woman's condition until she reaches the hospital. Advance planning for emergencies is therefore key to reducing maternal death.

Specially trained staff are needed to perform some obstetrical procedures (cesarean section and symphysiotomy for obstructed labor, laparotomy or hysterectomy to stop persistent bleeding, treatment for eclampsia and sepsis, and repair of obstetric fistulae). In Zaire, women's lives have been saved by nurses trained to perform cesarean sections (White, Thorpe, and Maine 1987).

Efforts must also be made to improve existing services. Major barriers to use of maternity care services include long distances to health facilities, inadequate transportation, lack of funds to pay for transport and health care fees, lack of knowledge about the need for and benefits of formal medical care, and, in many settings, low quality care.

*Postpartum care.* Postpartum care should include early detection and management of infection and hemorrhage, support for exclusive breastfeeding for six months, nutrition counselling and family planning services. Even among women who have delivered in hospital, postpartum follow-up is important because complications may arise after leaving inpatient care. Educating women, their families, birth attendants, and community health workers to recognize early signs of, and seek care for, infection, for example, may be lifesaving. Antibiotic treatment is sufficient to cure infection in more than 80 percent of cases if taken within four days of the onset of fever (Winikoff et al. 1991).

Postpartum care should respond to women's needs and preferences to ensure utilization and effectiveness. In Tunisia, the innovative Sfax program delivers integrated family planning and health services to the mother and child by linking postpartum care with a cultural tradition. In addition to follow-up and counseling immediately after birth, the program provides health care services and information for the mother and the infant on the fortieth day after birth, a day of religious and cultural importance for Tunisian mothers and children. In 1987 more than half the women who returned for the visit accepted a family planning method (Coeytaux 1989). The program has now been adopted nationwide.

#### *Prevention and management of sexually transmitted diseases*

At the primary health care level, efforts to control sexually transmitted diseases should focus on preventing transmission and treating infection in order to avert severe complications. Since the emergence of HIV/AIDS as a major public health problem and identification of STDs as risk factors for its spread, primary prevention of STDs merits increasing attention.

Treating STDs costs only US\$1 to US\$55 per DALY saved (World Bank 1993c). Preventing a single STD case in a woman is estimated to be almost 20 percent more effective than preventing a single case in a man (Over and Piot 1993). The efficiency of transmission of many STDs is greater from men to women than from women to men and the severity of STDs (other than HIV) is generally greater in women than in men. In addition, preventing and curing STDs in women who are or may become pregnant reduces perinatal transmission.

The costs of treating STDs are much lower than the costs of treating their complications or the enor-

mous direct and indirect cost of widespread STD and HIV infection (Piot and Rowley 1992). Although the lack of simple, inexpensive diagnostic tests for most STDs constrains control programs in areas with limited resources and facilities, syndromic diagnosis of STDs—based on characteristic groups of symptoms—can often be used in men, and risk-based management approaches may be useful in symptomatic women.

Factors such as the emergence of antimicrobial resistance, the prevalence rate of STDs in the population, and the feasibility of reaching at-risk groups (including partner notification) must be considered when weighing health program options. Health care providers should concentrate on making services available to high frequency transmitters, particularly commercial sex workers, who contribute substantially to the spread of infection. The cost-effectiveness of interventions drops rapidly when they are directed at the general population. Where the infection has spread beyond high-risk groups, a broader approach that includes women of childbearing age is important. Family planning and prenatal care services offer a valuable opportunity to provide STD counseling, screening, and treatment.

Because contracepting and pregnant women are sexually active and therefore at risk, it is desirable and cost-effective to offer STD counseling, diagnosis, and treatment at clinics that also provide maternal and child health care and family planning; in addition, clustering of services is cost-effective. Single-purpose STD programs often fail to reach women too embarrassed to use them, and those who are asymptomatic or who fail to recognize STD symptoms. By offering counseling, barrier contraceptives, and STD diagnosis and treatment, family planning and maternal health programs can help prevent STD transmission and STD complications. Counseling should include the risks associated with STDs, such as effects on infant outcome and greater susceptibility to ectopic pregnancy, as well as increased likelihood of HIV infection. Health workers at all levels—including traditional birth attendants—should be trained to recognize STD symptoms and to use appropriate treatment and referral protocols. Health workers should also be trained to counsel on condom use, identify sexual contacts, and assist in notification of partners, when necessary.

Drugs for treating STDs should be included on national essential drug lists, and the drug distribution system should be streamlined. Distribution should be encouraged through commercial channels and subsidized as necessary. Under a social mar-

keting project in Cameroon, an STD treatment kit is sold in pharmacies. The kit contains antibiotics, instructions, a "partner referral" card to encourage partners to purchase the kit, STD information, and condoms (FHI 1992).

*Condom promotion and distribution.* Aside from abstinence or changes in sexual behavior, condoms are the most effective means of preventing sexual transmission of STDs, including HIV/AIDS. To promote condom use, governments need to lower import duties and other fees (which typically raise condom prices by 35 to 100 percent) and permit condom advertising in the mass media. Subsidizing condom distribution and promotion is estimated to cost US\$76 per DALY gained, taking into account the impact of STDs, AIDS, and cervical cancer (a secondary effect of some STDs) on adults and children. Factoring in family planning benefits reduces the cost per DALY gained (based on child outcomes) to US\$45, making condom distribution even more cost-effective (Jamison 1993).

To date, subsidized commercial sales, community-based distribution, and workplace programs have been effective in distributing condoms to both high-risk groups and the general population. A community-wide intervention in Zimbabwe distributed more than 5.7 million condoms and reduced STD prevalence by 6 to 50 percent in different areas (World Bank 1993c). In Zaire, a 1987 mass media and condom marketing program was highly effective: more than 80 percent of women surveyed had heard about AIDS from the radio, and condom sales rose to seven times previous levels in one year (Liskin et al. 1989). In a program in Tanzania sponsored by the African Medical Research Foundation, trained peer educators (mostly prostitutes) have been effective in distributing condoms (D'Atre 1992).

*Prenatal screening and treatment for syphilis.* Cost-effectiveness estimates for treatment of syphilis vary greatly, depending upon its prevalence, assumptions about the risk of transmission, and the case-detection strategy used. In most developing countries, serologic screening for syphilis using the Rapid Plasma Reagin (RPR) test, which provides immediate results, and treatment with penicillin (where indicated) is a simple and inexpensive approach, with significant payoffs for infant outcome (Schulz et al. 1992). Accordingly, screening and treatment of syphilis during prenatal care is recommended. A project in Zambia reduced the incidence of syphilis among pregnant women by 60 percent within one year at a

cost of US\$0.60 per prenatal screening and US\$12 per maternal syphilis case averted (Hira et al. 1990).

The most serious consequence of gonorrhea and chlamydia in pregnant women is the occurrence of ophthalmia neonatorum (a severe eye infection that can cause blindness in newborns). Routine antibiotic prophylaxis for this condition in the newborn, which costs only \$1.40 per case averted, is recommended rather than screening and treatment of all pregnant women (Schulz et al. 1992).

*Symptomatic case management.* Syndrome-based treatment of gonorrhea, chlamydia, and genital ulcer diseases in symptomatic men is recommended. Symptomatic women with genital ulcers or pelvic inflammatory disease should also be diagnosed and treated using clinical algorithms developed by WHO. By following the step-by-step guidelines developed by WHO, health workers can match patient symptoms with those for locally prevalent STDs and provide treatment accordingly. Clinical and laboratory diagnosis of sexually transmitted diseases is generally not feasible in low resource countries, particularly in rural areas, because of cost and the unavailability of trained technical personnel and laboratory equipment (Lande 1993; Piot and Rowley 1992).

*Targeted screening and treatment of commercial sex workers.* When targeted to frequent transmitters of infection, screening and treatment can be extremely cost-effective. A project to diagnose and treat STDs among prostitutes in Nairobi, Kenya, for example, reduced the mean annual incidence of gonorrhea in this group from 2.85 cases per woman in 1986 to 0.66 cases per woman in 1989. The project also markedly reduced the incidence of other STDs, including HIV; at approximately US\$8-US\$12 per case, the project prevented an estimated 6,000 to 10,000 new cases of HIV infection (Moses et al. 1991).

Efforts are now underway to develop rapid, accurate diagnostic methods for resource-poor settings and to introduce them into STD programs through the STD Diagnostics Initiative. Formed in 1990 by an international group of STD experts, the initiative is working on the development of quick, inexpensive tests for chlamydia, gonorrhea, and syphilis.

### **Essential Behavior Change Interventions**

In addition to adopting the health care measures outlined above, countries can also benefit substan-

tially from a countrywide strategy—involving government, NGOs, and even the commercial sector—to inform the public and change health-related behavior. Such a concerted effort to foster the adoption of practices that improve women's health provides a necessary framework for health service interventions. Supportive health policies, including laws, government regulations, and health care protocols, are also essential. Policymakers attempting to address chronic health problems and new concerns would do well to consult health care workers and representatives of women's groups for their opinions on the limitations of present policy and suggestions for reform. Legal initiatives and monitoring are important for accelerating social changes.

### *Promotion of positive health practices*

Information, education, and communication programs can change the attitudes and practices of both men and women, health care providers, opinion leaders, and policymakers. Through broad education programs using mass media, community meetings, outreach workers, marketplace displays, and other communication channels, health agencies can promote clinic attendance, educate consumers on healthy lifestyles and treatment alternatives, allay fears, refute false rumors, help shape social norms, and build a constituency for women's health and nutrition programs. Entertainment media have proven effective for promoting a variety of health-related behaviors (including family planning, AIDS prevention, better nutrition, and smoking cessation). Educational programs in clinic waiting areas reduce the time needed to inform patients about health matters.

Public education programs and counseling help women learn how to recognize the signs of disease and convey information on when and where to seek help. Consumer education can enable women to treat minor ailments at home while urging them to seek timely intervention at the first sign of serious problems. The promotion of specific household behaviors (such as handwashing and boiling water) can have a noticeable impact on the entire family's health. Teaching women and family members to recognize the danger signs during pregnancy and to seek prompt medical attention can greatly reduce the incidence of maternal deaths. In Zaria, Nigeria, a radio campaign stressing the dangers of a labor lasting more than twenty-four hours is credited with a significant decrease in the incidence of obstetric fistulae (Harrison 1986).

*Delayed childbearing among adolescents.* Favorable laws and regulations have a major impact on the availability and accessibility of contraceptives and abortion. Where early marriage contributes to early childbearing, governments can raise the legal age of marriage and provide encouragement and incentives for young women to postpone marriage and remain in school. Proscriptions regarding contraceptives and medical procedures and spousal consent requirements can be relaxed. Health agencies can have far more impact if they can ensure adolescents and unmarried women access to confidential reproductive and sexual health information and services, protected by law, and courteous, sensitive treatment.

Health workers need to publicize the harmful effects of early childbearing and closely spaced pregnancies through a variety of channels. By advocating postponement of the first birth until age eighteen or later and at least two years spacing between births, health agencies can promote public discussion and help to change social norms. Satisfied users of contraception can be used as peer motivators to reinforce these messages.

Programs need to target adolescents as a discrete group (Box 3.1). Messages, media use, outreach programs, and service outlets need to focus on adolescents' preferences and appeal to them directly. Whenever possible, adolescents should be involved in planning, especially in the needs assessments, program design, and message testing aspects. In general, education programs which are implemented by peers have been more effective than adult-directed initiatives. Multiservice centers that integrate recreation and education with health services are effective in recruiting adolescents but may be costlier per contraceptive user than family planning clinics or outreach activities (Senderowitz 1994).

Both girls and boys need to understand the reproductive process. Schools should provide instruction in reproductive physiology and sex education—not only information on when conception occurs and how to prevent it but also negotiating skills—as part of family life education or as an integral part of the school curriculum, starting before sexual activity has begun. Studies have shown that access to counseling and contraceptives does not encourage earlier or increased sexual activity (Grunseit and Kippax 1993).

Mass media campaigns can be effective in reaching adolescents. In Jamaica, the National Family Planning Board broadcast TV and radio spots and songs with the message "Before you be a mother, you got to be a woman" (Church and Geller 1989). Yet

while campaigns promoting delayed childbearing seem to be well received, there has been little analysis of their specific effects on behavior.

*Safe sex.* Safe sex has been defined as sex that is safe from unwanted pregnancy, disease, or the unwanted use of power in sexual relationships (IPPF 1993). Because most people know little about sexually transmitted diseases and HIV/AIDS transmission, symptoms, and long-term risks, public education programs need to inform people of the reasons for adopting preventive behaviors (including abstinence, monogamy, nonpenetrative sex, condom use, and other behaviors that reduce exposure) and for seeking treatment when needed. Despite some controversy, mass media campaigns have been effective in informing the public about sexually transmitted diseases and AIDS and changing sexual behavior. Following a nine-month mass media campaign in Mexico, for example, condom use rose among university students, prostitutes, and other audiences (Liskin et al. 1989).

In general, women know less about sexually transmitted diseases and AIDS than do men, learn

### Box 3.1: Reaching adolescents

When the Gente Joven ("Young People") program of the Mexican Family Planning Foundation was established in 1986, Mexican schools did not provide sex education. Gente Joven filled the gap by bringing information on sexuality and family planning to young people in poor urban areas. Its goals are to:

- *Provide a foundation to enable teenagers to make their own informed decisions, rather than simply providing contraceptives.* Gente Joven focuses on the emotional and social issues that adolescents experience as well as the biological and clinical aspects of sexuality.
- *Recognize the gender differences between boys and girls that influence their sexual activity and contraceptive use.* For example, a study on AIDS prevention revealed that girls are reluctant to bring up condom use because it might be interpreted by boys as evidence of too much sexual experience. Gente Joven incorporates such information into its program strategies.
- *Focus on how ideas are communicated, as well as on what the message conveys.* Video and radio are widely used by Gente Joven because they are particularly effective channels for communicating with teenagers.

Source: Marques 1993.

about them later, and are less likely to hear about them from the mass media (Liskin et al. 1989). Personal contacts with individual women or groups of women may be needed to convey related information effectively. Women can be approached at places where they usually meet, such as clinics, schools, market squares, and farmlands, or through grassroots organizations such as market women's associations, women's media associations, women's clubs, and church groups (Post 1993b). Educational programs should reach women of all ages, including women of childbearing age, young girls before they become sexually active, and older women, who often educate and advise youth.

Counseling in negotiation skills can help women to persuade their partners to use condoms, and condom promotion campaigns can change men's negative image of condoms. Over the long term, fundamental attitudinal and behavioral change is needed to make gender relations more equitable, so that women have more power to protect themselves against unwanted pregnancy and disease and men share responsibility for the sexual health of their partners. Outreach programs are also needed to promote condom use among men. Intensified research to develop effective female-controlled methods of sexually transmitted disease prevention (such as a vaginal microbicide) is urgently needed.

*Adequate nutrition.* Health agencies can help to inform people about women's nutritional needs at different stages of the life cycle and serve as advocates for better diets for girls and women. In addition, government agencies can identify the need for programs to address contributory problems (such as poverty, women's heavy workload, high fertility, lack of safe water supplies, and poor sanitation). Health workers can be trained to recognize nutritional deficiencies and to counsel patients on corrective measures. To be effective in countering harmful food taboos and changing food allocation patterns within households, messages must be tailored to local conditions.

High priority should be given to improving nutritional intake among young and adolescent girls in order to prevent health problems in later life. Adequate intake of micronutrients, especially calcium and iron, is especially important. In areas where girls receive less or poorer quality food than boys, health workers need to make an extra effort to educate caregivers on the long-term consequences of this practice. Special initiatives such as home visits,

school meals, and other supplemental feeding programs may be helpful in improving girls' nutrition.

Even with little increase in household spending on food, nutrition education programs can influence food selection, preparation techniques, adherence to food prescriptions, use of vitamins and other supplements, and the treatment of diarrhea and other diseases that inhibit food absorption. Nutrition education programs have been successful in a variety of settings in promoting breastfeeding and appropriate weaning foods. They can also be used to promote low-cost, nutritious foods that are readily available and the cultivation of micronutrient-rich crops in home gardens as an effective way of ensuring an adequate supply of suitable foods for dietary improvement. A project in West Sumatra, Indonesia, for example, promoted dark green leafy vegetables (rich in iron and vitamin A) through the radio and other media. After the 1987-89 campaign, the proportion of pregnant women who consumed these vegetables daily rose from 19 to 32 percent (Favin and Griffiths 1991). A similar project in Brazil, which promoted a more nutritious diet for pregnant women along with prenatal care, reduced low birth weight among infants by nearly 50 percent in one area (Victora et al. 1991).

*Increased male support.* With the support of their partners, women need to assume greater control over their health and well-being. In many cultures, men are the decision-makers in such health-related concerns as food purchases and distribution within the family, family size, birth spacing, and the use of health care. In Senegal, for example, a study seeking to learn why so few women used maternal health services found that only 2 percent of the women interviewed said they would decide for themselves to seek care in the event of pregnancy-related complications. For most, the decision rested with their husbands (Thaddeus and Maine 1990). Men also influence women's health directly through their own behaviors. Education programs and services directed to men are needed to promote contraceptive use, safe sex, and reduction of substance abuse and violent behavior.

Health and other agencies need to make a concerted effort to make men aware of women's health problems and encourage them to take responsibility for the effects of their behavior. Reaching boys, both in and out of school, with reproductive health education is important because men so often dominate the sexual relationship. School-based and mass media programs that reach boys at a young age can

be particularly effective in shaping later attitudes and practices.

To date, few health and nutrition education programs have been targeted to men. Examples of male-oriented programs are found in Honduras, Kenya, and Thailand, where breastfeeding promotion campaigns urge men to help their lactating wife by providing her with extra food and liquids, assuming extra chores to enable her to rest, and encouraging her to continue breastfeeding (Green 1989). In Mali, the Nutrition Communication Project has mounted a multimedia campaign to persuade men to provide women with additional and more nutritious foods during pregnancy (Fishman et al. 1991).

Men need to assume more responsibility for their fertility. To increase men's role in preventing unwanted pregnancy, family planning programs need to reach out to men to promote the use of male methods of contraception, support for their partner's contraceptive use, and increased spousal communication about family size goals, fertility regulation, and disease prevention. One approach is to provide men-only hours or clinics. In five Colombian cities, PROFAMILIA, a Colombian family planning association, has created men's clinics, annexed to a longstanding program directed primarily to women. The clinics provide family planning and diagnosis and treatment of urological and sexual problems, infertility, and sexually transmitted diseases (Rogow et al. 1990).

The imbalance in contraceptive responsibility is particularly evident for voluntary sterilization. Despite the advantages of vasectomy over female sterilization in lower health risks, cost, and recuperation time, female sterilization procedures predominate in nearly all countries. In Latin America, women obtain 93 percent of the sterilization procedures (PAHO 1993). Even in Thailand, where vasectomy has been heavily promoted, women obtain four in five sterilizations (Ross et al. 1993). The "no-scalpel" technique of vasectomy, which has further simplified the procedure, should be made more widely available and promoted. Also, research is needed to provide a wider array of male contraceptive options.

Since women bear the major consequences of unplanned pregnancy, requiring men to meet their parental obligations might motivate them to take a more active role in preventing pregnancy. Few countries have policies requiring men to take financial responsibility for their offspring, and there is no evidence about whether such policies have any impact on sexual behavior or fertility. Proposals for initiating campaigns to promote male responsibility for

family planning have generated useful public discussion. One poster, featuring a doleful pregnant man asking: "Would you be more careful if it was you who got pregnant?", has been adapted for use in eight countries (Gallen et al. 1986).

### *Eliminating harmful practices*

In addition to educational and policy measures to promote positive health practices, governments and health agencies need to address harmful practices associated with women's subordinate status (such as discriminatory access to food and health care, genital mutilation, and gender violence). Because these practices arise from the general social, economic, and cultural environment, cooperation and coordination on a wide scale is needed to change them.

By emphasizing the health aspects of harmful practices, governments can promote public awareness of their significance, prevalence, and impact. Health workers can be trained to recognize and treat the health conditions that result from these practices, while health agencies can document them and identify their causes and potential interventions for their control, as well as disseminate related information.

*Gender discrimination.* Health planners, managers, and providers can help sensitize policymakers, community leaders, and the general public about the profound impact that gender discrimination has on the health, well-being, and productivity of women—and their children. In resource-poor countries, public education programs on these topics can be provided as part of the Essential Services for women. In informing the public, health workers need to stress the high human costs of neglect and mistreatment of girls and women—including the long-term implications of inferior care for girls and the deleterious effects of poor nutrition and early childbearing.

While increasing public awareness is a necessary first step, the ultimate goal is the adoption of positive social norms and health behavior. Governments, therefore, will need to provide active support for interventions designed to change behaviors, first on a limited-scale and later on a national level. Policies, cultural practices, and social norms that perpetuate women's low status need to be reexamined. Higher levels of education and vocational training for women, greater participation in the labor force, and improved access to income, land, and credit will also raise women's status and influence gender-power relations.

**Genital mutilation.** Governments and NGOs, including professional organizations and women's groups, should be encouraged and supported to work to eliminate the practice of genital mutilation. Enactment of laws and clear policy declarations prohibiting female genital mutilation may help to discourage its practice, although more broad-based efforts are needed. Widespread public education programs can publicize the harmful effects of genital mutilation and address its cultural roots. Local research may be needed to determine its prevalence, the cultural reasons for its perpetuation, and the harmful health, social, and economic consequences, as well as to test effective approaches (Box 3.2). Health workers can help disseminate this information to the community.

**Domestic violence and rape.** Because violence against women is deeply rooted in gender-based power relations, sexuality, self-identity, and social

institutions, it is difficult to change without confronting these underlying issues directly. That means that the health sector must go beyond treating the consequences of violence by examining the roots of cultural and social legitimization of bodily harm and male control over female behavior and encouraging other public and private institutions to play a more active role in addressing them.

In most countries, laws fail to protect the victims of domestic violence or to punish its perpetrators. Many violent crimes go unreported because the victims are afraid of the perpetrator and of society's skepticism, its condemnation of victims, and ostracism. Where violence against women is condoned or punished lightly, laws should be strengthened to serve as a deterrent. Key legal changes include removing barriers to prosecution (such as requiring witnesses and evidence of permanent injuries), eliminating practices that are prejudicial to women (ignoring complaints of women who are not virgins, exonerating

### Box 3.2: Eliminating female genital mutilation

Every year two million girls are subject to genital mutilation. Unlike male circumcision, in which the foreskin is removed without damage to male organs, female circumcision involves the cutting and removal of parts or all of the external female genitals. Practiced mainly in Eastern and Western Africa (with an estimated prevalence of at least 50 percent in Benin, Burkina Faso, Central African Republic, Chad, Côte d'Ivoire, Djibouti, Ethiopia, Gambia, Guinea, Guinea-Bissau, Kenya, Liberia, Mali, Nigeria, Sierra Leone, Somalia, Sudan, and Togo), it is also found in parts of Asia and the Middle East (such as Egypt, India, and Yemen). Prevalence is highest in Somalia and Djibouti where 98 percent of women are subject to genital mutilation, 80 percent or more of them in its most extreme form (Toubia 1993).

Genital mutilation has serious, and sometimes fatal, physical consequences as well as psychological effects. Immediate consequences include excruciating pain, hemorrhage, tetanus, and sepsis. Long-term consequences include scarring, urinary tract infections, painful intercourse, obstetric fistulae, difficulty during urination and menstruation, and complications in childbirth.

Female genital mutilation has been discussed as both a human rights and a health issue. In 1990, the Convention of the Rights of the Child condemned female circumcision as torture and sexual abuse. The Forty-sixth World Health Assembly in 1992 adopted a resolution that promotes the elimination of female genital mutilation and other harmful traditional practices. Organizations such as the Inter-African Committee on Traditional

Practices Affecting the Health of Women and Children are working to focus attention on this issue and to bring about its elimination. Since multiple cultural and social factors contribute to the continuation of this practice, it is best handled nationally, with involvement of local women's and professional groups.

In Burkina Faso, a national committee to eradicate female genital mutilation was established in 1990 by presidential decree. The committee has established provincial groups, held workshops, and developed a film and teaching materials (IAC 1993). In Kenya, Maendeleo ya Wanawake Organization (MYWO), a women's organization, conducted a study on female genital mutilation in the area. The study found that approximately 90 percent of women interviewed in the study area had undergone genital mutilation. Even though most circumcised women reported having experienced problems due to circumcision, more than 65 percent expected to have their daughters circumcised. Additional qualitative research provided some explanations for this practice and belief. Circumcision signifies a rite of passage, conferring maturity and respectability. A girl who is uncircumcised is considered unfit to become a wife and mother. Benefits such as education, gifts, celebrations and privileges are bestowed on the circumcised girl. The MYWO developed a communication program to re-educate community leaders and change agents, parents, elders, and youth and is currently exploring ways of eliminating the practice of female genital mutilation (Matovina 1992, Toubia 1993, WHO 1993b).

rapists who agree to marry their victims), and ensuring that married women have access to family assets and are free to leave abusive relationships.

Health and family planning workers can be an important source of support and referral for victims of violence. They can also exacerbate the situation through insensitive and judgmental behavior. Sympathetic treatment and providing a space to talk can facilitate healing. Experience has shown that most women will disclose abuse if questioned by a sympathetic health care provider. Increasingly, specialized counseling, legal, and support services are available to assist abused women who are referred from health care settings. Even where no special services are available, health providers can be trained to emphasize that no one deserves to be beaten or to be blamed for being raped.

In many countries, NGOs are raising awareness about the problem of violence against women. In Honduras, Jamaica, and Nicaragua, NGOs have used theatrical productions to generate public discussion on this topic. One group has also protested against objectionable portrayals of women and violence in the media (Heise et al. 1994; Popular Education Research Group 1992).

### Expanded Health Interventions

For developing countries with the financial resources and political will to go beyond the Essential Services, the Expanded Services provide a more comprehensive set of interventions and therefore more adequate health services for women (Table 3.3). For lower-income countries that initially adopt only the Essential Services, the Expanded Services can be incorporated incrementally, with the first priority to expand and improve the quality of Essential Services,

such as contraceptive choice for all reproductive-age women. A surveillance system to assure the quality of obstetric facilities and home-based maternal health care can substantially enhance maternity care services. Services that might be added to the Essential Services include the cost-effective management of chronic diseases (particularly cervical cancer) and expanded measures to address the biological and social aspects of women's health throughout the life cycle. On the other hand, procedures with low cost-effectiveness (such as routine ultrasound testing) and unnecessary surgical interventions (such as unwarranted cesarean sections and hysterectomies) should be discouraged in all settings (Box 3.3).

### Expansion of Essential Services

*Increased choice of contraceptive methods.* As family planning programs expand to cover more clients through a larger network of outlets, including intensified outreach to adolescents, so should the range of contraceptive methods offered for delaying, spacing, and limiting pregnancies. Each method added attracts new users and expands the choices for current users, increasing overall contraceptive prevalence and continuation rates and more successfully meeting women's differing needs. Analysis of data from seventy-two developing countries found that access to a range of methods strongly affected contraceptive prevalence, while studies in Hong Kong, India, Korea, Taiwan (China), and Thailand found that adding a new contraceptive method generated new adopters (Freedman and Berelson 1976). Strengthening the referral system can help to expand method choice by providing access to specialized facilities offering methods such as sterilization and natural family planning.

**Table 3.3: Expanded Services for women's health**

#### *Additional health interventions*

##### **EXPANSION AND IMPROVEMENT OF ESSENTIAL SERVICES**

- Increased choice of contraceptive methods
- Enhanced maternity care
- Expanded screening for and treatment of sexually transmitted diseases
- Extended nutrition assistance to vulnerable groups
- Screening, treatment, and referral for victims of violence

##### **CANCER SCREENING AND TREATMENT**

- For cervical cancer from age thirty-five
- For breast cancer from age fifty (where resources permit)

#### *Additional behavior change interventions*

##### **INCREASED ATTENTION TO EARLY PREVENTION**

- In-school education about reproductive physiology, sexuality, and reproductive health
- Public information and services to prevent unwanted pregnancy and sexually transmitted diseases
- Education about women's increased nutritional needs
- Education about smoking and substance abuse

##### **STRATEGIC EFFORTS TO REDUCE GENDER DISCRIMINATION AND VIOLENCE**

##### **GREATER FOCUS ON WOMEN BEYOND REPRODUCTIVE AGE**

- Education about nutritional requirements
- Self-help links with support networks

In settings with sufficient infrastructure, post-coital contraception can be used to help prevent unwanted pregnancy and reduce the need for abortion, including among adolescents and rape victims. The major postcoital methods are combination pills containing estrogen and progesterin and IUDs, which have failure rates of under 2 percent if administered within three and five days of unprotected intercourse, respectively (Van Look 1990). A new drug called RU-486, which can be provided within the first sixty-three days of pregnancy and is combined with a dose of prostaglandin, shows promise as a nonsurgical method of early abortion. The current regimen requires medical supervision, although alternatives are being studied. More information on the cost of RU-486 and on infrastructural and medical back-up requirements is needed before its widespread use can be advocated in low-income countries (Sundström 1993).

*Enhanced maternity care.* As the health infrastructure improves, maternity care services should be upgraded to include expanded routine and referral care, with increased coverage and full-service obstetric facilities. More detailed information on expanding maternity care services can be found in *Making Motherhood Safe* (Tinker et al. 1993a).

In prenatal care, increased attention needs to be given to the quality of care and a more comprehensive strategy for improving women's health. Special efforts should be made to reach marginalized groups, such as adolescents and the poorest women. To improve the quality of care, maternal death audits should be introduced, and efforts should be intensified to coordinate supervision and back-up from hospital to community level. Services will need to be decentralized and women redirected to health centers for routine care, since referral sites will tend to become overwhelmed by demand. Birthing centers located near hospitals may provide

### Box 3.3: Inappropriate practices in women's health

When misapplied, some health care practices can jeopardize the health of the women they are intended to benefit, as well as squander valuable resources that could benefit larger numbers of women.

#### Misplaced emphasis in prenatal care

Appropriate prenatal care with back-up for managing obstetric complications is essential for maternal and child health. However, many countries emphasize the frequency of prenatal visits, rather than the quality of care provided. This emphasis on number of visits strains the resources of both the individual (travel costs, waiting time) and the health system. Prenatal care is often overly dominated by an ineffective effort to predict pregnancy complications, most of which are, unfortunately, unpredictable. Because of this, access to treatment for complications must be available for all women.

In the former Soviet republics, pregnant women are seen at least twelve times (and often over twenty) during pregnancy, and prenatal visits are marked by numerous diagnostic and lab tests, including routine ultrasonography. Despite these many visits, there appears to be little prenatal counseling and education regarding nutrition and family planning (Weinstein et al. 1993). When properly conducted, good quality prenatal care can be provided through as few as three to six prenatal visits.

#### Unwarranted cesarean sections

Under appropriate conditions, cesarean section can be a life-saving procedure for the mother and infant. However, the incidence of cesarean sections is not always justified on medical grounds. In Brazil, for example, the cesarean rate exceeds 30 percent (PAHO 1993). Cesarean rates range from 5 to 20 percent in developed countries (Chalmers et al. 1989). Misuse of cesarean sections not only adds to health care costs (the additional cost imposed by cesarean sections in Brazil in 1985 was \$13.4 million) but also exposes women to far greater health risks than they face during vaginal deliveries. Studies in Latin America indicate that the decision to perform cesarean sections is based not only on maternal or fetal need, but also on health care providers' and hospitals' economic considerations (PAHO 1993) and the convenience of both the provider and patient.

#### Misdirected screening for cervical cancer

The limited cervical cancer screening conducted in developing countries is generally provided through family planning and maternal and child health clinics. Such an approach erroneously targets younger women rather than the women aged thirty-five years or older who are most at risk. Screening women from the age of thirty-five has been shown to be at least 90 percent as effective as screening from the age of twenty-five, and to cut costs by one-third (Miller 1992).

a low-cost alternative for routine deliveries, as has been found in Mexico.

As deliveries become increasingly institutionalized, providers need to resist the overuse or abuse of medical technologies and to emphasize client-oriented care, including preventive and promotive counseling. Women should be encouraged to seek the support of family members, and babies should be kept with their mothers. These "mother and baby friendly" practices are now being introduced to countries in the former Soviet Union, replacing the common practice of separating mothers from newborns and family members and keeping them in the hospital for an unnecessarily long time for routine deliveries.

*Expanded screening for and treatment of sexually transmitted diseases.* Health agencies can increase coverage for the screening and treatment of sexually transmitted diseases as resources permit. Key interventions include:

- *Expanded screening and treatment of high frequency transmitters.* Efforts should be further intensified to reach high-risk groups, which include, in addition to commercial sex workers, the men who hire them, truck drivers, and migrant laborers. Projects in Peru, Tanzania, Thailand, and Zimbabwe have successfully persuaded prostitutes and their clients to use condoms more regularly. Thailand's program of 100 percent condom use in brothels now covers sixty-six of the country's seventy-three provinces (Rojanapithayakorn 1992). As part of a social marketing project in Cameroon, prostitutes trained as peer educators have sold 19 percent of the condoms distributed, with the added benefit of reducing their dependence on prostitution for income (USAID 1991).
- *Detection of and treatment for genital ulcers, vaginal discharge, and pelvic inflammatory disease.* Efforts should be expanded to all women of reproductive age and should cover a broader range of reproductive tract infections, particularly vaginal discharge. While treating patients with symptoms can help to avert serious complications and the further spread of sexually transmitted diseases, the majority of women with STDs are asymptomatic. Furthermore, diagnosis of syndromes, such as abnormal vaginal discharge, requires use of risk-based algorithms and/or simple diagnostic tests. Therefore, in settings where diagnostic facilities exist, specific diagnosis and appropriate treatment should be

made available to women with symptoms suggestive of STDs and to asymptomatic women, especially those considered at risk, who attend prenatal, family planning, or primary health care facilities.

- *Partner notification.* By placing increased emphasis on notifying the partner of a person diagnosed with a sexually transmitted disease, health workers can reduce the spread of such diseases, including HIV/AIDS, and prevent reinfection after treatment of STDs. Because men more frequently have symptoms, they may be more likely to seek care. Furthermore, partner notification can lead to earlier treatment for women with sexually transmitted diseases, thereby reducing the rate of serious complications, such as pelvic inflammatory disease.
- *Reducing the transmission of HIV through blood transfusions.* Pregnant women, in particular, have an increased exposure to blood transfusions. Educating health care providers about possible risks and establishing guidelines for blood transfusions can reduce the number of transfusions by more than 50 percent at a negligible expense (World Bank 1993c). Where there are blood banks, screening of donated blood can be added for an additional cost of about 5 percent. Where such facilities are not available, rapid tests (such as the dipstick) are needed.
- *HIV counseling and testing.* Where HIV prevalence is high, women of reproductive age should receive counseling and have the option of being tested for HIV. HIV-infected pregnant women should be provided with counseling about the risk that their child may be HIV-infected and informed of their options, including abortion, and, where affordable, antiretroviral therapy with AZT, which may reduce risk of transmission to newborns by as much as two-thirds (MMWR 1994).

*Nutrition assistance for vulnerable groups.* While the Essential Services focus on nutrition assistance for pregnant women, Expanded Services should extend this assistance to other groups at risk of malnutrition, including young and adolescent girls, and elderly women. Special programs for refugees and dislocated persons may also be needed.

Nutrition strategies fall into two major categories: decreasing energy loss by controlling fertility, preventing infections, and reducing the physical workload; and increasing intake by improving the diet, reducing inhibitors that limit the efficiency of food absorption, and providing

food and micronutrient supplements. Nutrition programs should assess the nutritional status of girls and women at risk and provide food supplements as needed, improve nutritional habits through counseling and public education, identify appropriate local food sources and proper food preparation and storage practices, and educate men and women about improving women's dietary habits and food allocation within the family. In collaboration with other agencies, nutrition programs should promote delayed pregnancy until after the teenage years, birth-spacing intervals of at least two years, fewer pregnancies per woman, and greater use of labor-saving technologies (Ghassemi 1990). Because inadequate calcium contributes to osteoporosis (bone loss), which accelerates after menopause, calcium intake is critical, especially during adolescence.

Governments can promote better nutrition by ensuring that low-income families have the means to purchase nutritious foods. Measures to ensure adequate food supplies include consumer price supports for staple foods, transportation systems, income transfers for vulnerable households, food distribution, dietary diversification, and food fortification.

Three major types of nutrition interventions can be used to improve the nutritional status of women and girls:

- *Food supplementation.* If properly targeted and tailored to local market conditions, food supplementation programs can have a substantial impact on nutritional status (World Bank 1993c). In Guatemala, for instance, pregnant women who received food supplements had babies with higher birth weights than women who received no supplements (Villar and Rivera 1988). Generally, food supplementation programs are costly to implement and maintain. Nevertheless, they may be the only effective means of improving the nutritional status of extremely poor populations.
- *Micronutrient supplementation.* Appropriate micronutrient supplementation throughout the life cycle—such as iron and folate pills, vitamin A capsules, and iodized oil—can be highly effective in overcoming vitamin and mineral deficiencies (World Bank 1993c). Most micronutrient programs cost less than US\$50 per DALY gained (McGuire et al. 1993). For more details on micronutrient programs, see *Enriching Lives: Lessons from Micronutrient Programs* (McGuire et al. 1993).

- *Food fortification.* Adding micronutrients (such as iron, vitamin A, and iodine) to processed foods can be a simpler and quicker means of improving nutritional status than changing diets. To be effective, fortified foods must be readily available, widely consumed by the target population, and relatively inexpensive (World Bank 1993c). Food fortification is a cost-effective option where adequate infrastructure is in place.

*Screening, treatment, and referral for victims of violence.* Health care providers can play a key role in identifying survivors of violence and referring them to appropriate social and legal services. Only a few simple questions are needed to screen for physical or sexual abuse. Screening programs can be introduced in prenatal clinics, emergency rooms, and other health facilities to assess women's risk of exposure to violence. Health facility protocols designed to identify victims of violence can help ensure timely intervention and gather information on the severity of the problem. Health care providers and other professionals who deal with women need to be trained to recognize signs of abuse, record information on the incidence and consequences of violence, provide sensitive counseling and treatment, collect legal evidence for prosecution, and refer victims to appropriate services.

At least forty developing countries have NGOs that assist survivors of violence through rape crisis centers, centers for battered women, support groups, legal aid, counseling, and other services. A few governments—including those of Brazil, Mexico, and Papua New Guinea—also provide services to battered women and rape victims. Malaysia has formed women-only teams at police stations and hospitals. In Costa Rica, one NGO trains teachers, therapists, and social workers to run self-help support groups for victims of sexual abuse (Heise et al. 1993).

Specific violence-related services that health agencies should offer are:

- *Postcoital contraception for rape victims.* Offering postcoital pills, IUD insertion, or abortion to rape victims can spare them the additional trauma of unwanted pregnancy.
- *Screening and referral.* Health workers can perform an important service simply by breaching the wall of silence that surrounds abuse and putting women in contact with services designed to deal with violence-related problems. Screening should be conducted privately and be as noninvasive as possible, as part of a more general process of questioning about the woman's sexual

and gynecological history. Clinic staff should contact local women's groups to familiarize themselves with support services. Often, advocacy groups and crisis centers have information materials that can be displayed in waiting areas.

- *Record-keeping.* To interrupt the cycle of violence, health care providers need to take special care to collect and document evidence of rape and assault in a form that is adequate for later legal action. Such information can also be used to document the extent of violence as a social problem.

### *Cancer screening and treatment*

Early detection of cancers is important because treatment is most effective in the early stages of the disease. The cost-effectiveness of cancer-screening programs depends on the incidence of the disease, the technical feasibility of screening and treatment at early stages, and the possibility of targeting high-risk groups.

*Cervical cancer.* Screening for cervical cancer is particularly cost-effective because the disease can be treated relatively easily in its early stages. The most common screening method is the Pap smear, but other, more economical methods (such as visual examination, either unaided or aided by low-power magnification, and acetic acid treatment of the cervix) are now being evaluated for clinical use. Treatment of preinvasive cervical lesions is very successful and can be conducted cost-effectively using cryotherapy and loop excision. Treatment for more advanced stages requires surgery and sometimes radiation, which are both far less effective and more expensive (Miller 1992).

Studies have shown that screening all women once in their lifetime prevents many more cases of cervical cancer than screening a small proportion of women every few years. The goal should be to screen every woman thirty-five to forty years of age at least once in a lifetime. If more resources are available, the frequency of screening could be increased to every ten years for women thirty-five to fifty-five years old. If resources increase and a high proportion of the target group is being screened and resources permit, screening should be extended, first to older women (up to the age of sixty) and then to younger women (down to the age of twenty-five) (Miller 1992). In parts of Africa, incidence appears to occur earlier than in other countries, so that targeting women younger than thirty-five before targeting women over fifty-five may be more cost-effective.

A program that screens all women over the age of thirty-five for cervical cancer at five-year intervals costs an average of US\$100 per DALY gained. Increasing the screening interval reduces the cost (Jamison 1993). In countries where resources are more limited, feasible and cost-effective screening programs should treat only severe dysplasia or carcinoma in situ, and use such relatively inexpensive outpatient treatments as cryotherapy and loop electrode excision procedures (Sherris et al. 1993).

*Breast cancer.* Early detection is equally important for breast cancer. The inclusion of breast cancer management in the Expanded Services will depend on local prevalence and resource availability. The most cost-effective method of breast cancer screening is physical examination (both by the woman herself and by health care providers). Physical examination alone can detect about two-thirds of the cancers detected by mammography. Where additional resources are available and breast cancer is common, mammography can be used as a diagnostic tool, although this increases the cost tenfold when done on an annual basis. Screening programs that include periodic examination by a trained health worker and a mammogram once a year for women aged fifty to sixty-nine can reduce breast cancer mortality by 30 to 40 percent when appropriate treatment is provided (Miller et al. 1990). Treatment of breast cancer, however, requires relatively expensive surgery, radiation therapy, and chemotherapy and is not likely to be cost-effective in many developing country settings.

In countries where the incidence of breast cancer is on the rise (due to declining fertility, dietary influences, and environmental carcinogens) and adequate resources are available, breast cancer screening and treatment may form a component of the Expanded Services. Breast cancer screening is not generally recommended unless resources are available to appropriately screen at least 70 percent of women in the target age group (Miller et al. 1990). Furthermore, cancer screening alone provides no benefits; resources must also be available for the appropriate treatment.

### **Expanded Behavior Change Interventions**

Most health services have paid little attention to the special health needs of school-aged girls and adolescents, which differ from those of young children and adults. Adolescence, in particular, is a period of rapid physical growth, physiological changes associated

with puberty, and mental stress. Overall health and nutritional status during these formative years carries over into adulthood. It is also the time when unhealthy behaviors, such as early pregnancy, smoking, and drug abuse, may begin.

Health services, therefore, could realize substantial benefits by intensifying programs for school-aged girls and especially adolescents. Messages, media use, outreach programs, and service outlets need to appeal to these young women directly by focusing on their needs and preferences. In general, reaching them through existing institutions, such as schools and networks of their peers, is more cost-effective than motivating them to come to a new site. Since peer education programs have been more effective than adult-directed initiatives, youth should be involved in program planning and implementation.

#### *Health education for early prevention*

For greatest benefits, health education efforts should influence behavior that affects a child at the earliest possible stage of development. Nutrition programs should also focus on girls' nutritional requirements during early childhood to prevent undernutrition, poor weight gain, and growth retardation.

Working through education systems, governments can provide information to girls and adolescents on general health and disease prevention, contraception, sexually transmitted diseases, HIV/AIDS, substance abuse, and nutritional needs. School curricula can also cover communication skills, strategies to resist peer pressure, and negotiating techniques. A curriculum on "Life Planning," which emphasizes experiential, interactive learning and puts sexuality in a broader life context, has proved successful in increasing knowledge and changing attitudes (WHO 1992a). Governments can also support nonformal education programs, including peer education and community outreach, in order to reach adolescents where they live, learn, work, and play.

With the AIDS pandemic making early sexual experimentation potentially life-threatening, it is particularly vital that young and adolescent girls understand the basic facts about sexuality and reproductive health so that they can make responsible decisions about their sexual behavior. Through educational programs and counseling, health care providers can stress the dangers of early childbearing and the serious consequences of sexually transmitted diseases. Sex education and contraceptive services must be made available in all cultural set-

tings—regardless of age or marital status. Restricting adolescents' access to contraceptive information and services has not reduced premarital sexual activity, but it has left adolescents without the means to make responsible choices and protect themselves from unintended pregnancy, sexually transmitted diseases, and HIV.

Young people and their caregivers are often unaware of the increased need for energy-producing foods and micronutrients during adolescence to support physical development and prepare young women for childbearing. Nutrition education, provided through multiservice and vocational training centers, has been effective in improving adolescents' nutritional status. It is also important that young people take part in food production, and that the entire family learn about nutrition and supplemental feeding programs (WHO 1986).

In all countries, adolescence is a period when important lifestyle patterns are established, making it an important time to influence decisions about the use of tobacco, alcohol, and drugs. Since smoking is increasing fastest among young women, public education programs, school curricula, and advertising regulations can place special emphasis on persuading young women not to smoke. Mass media campaigns can counter advertising directed to young women that portrays smoking as glamorous and sophisticated behavior. Governments can also restrict the advertising and sale of tobacco products to minors, tax such products, and regulate tobacco production and imports. Messages need to stress the hazards and disadvantages of smoking and to promote alternative strategies for coping with stress.

#### *Increased efforts to reduce gender discrimination and violence*

Instead of merely treating injuries, malnutrition, and other health problems that derive from society's general neglect of women, governments can move vigorously to address gender discrimination and violence. Countries that can afford to go beyond the Essential Services should define clear strategies for reducing discriminatory attitudes and practices and gender-related violence. Much more can be done, for instance, to document and publicize the effects of gender inequity and to develop appropriate outreach programs.

Health agencies should concentrate on three major areas:

- *Public education initiatives.* Much can be accomplished simply by bringing to widespread public

attention the damage to women's health and productivity caused by social practices that favor males and by violence against women. Public education initiatives can work to influence the content of popular radio and TV programs, to educate media representatives, and to promote feature and news stories and group discussions on the subject.

- *Health care training.* Regular pre- and in-service training for health care providers is needed to sensitize staff to practices that are harmful to women, and to teach the skills needed to address them. Health care providers need to be aware of possible barriers to communication with female clients and of ways to elicit women's judgements about their own health needs and to address them effectively.
- *Community participation.* Although health care providers can deal with only a fraction of the myriad problems associated with discrimination and violence against women, they can put women in touch with other agencies and organizations that can provide other kinds of assistance. To do this, health care providers need to establish a network of relations with related services (including law, education, employment, credit, and community resources) and support networks of professionals and community activists.

### *Women beyond reproductive age*

To improve the health and productivity of women aged forty-five and older, as well as the associated costs of curative care, requires more attention to prevention through diet and exercise; avoidance of tobacco, excessive alcohol consumption, or other harmful substances, beginning early in life and continuing through and after menopause; screening for cervical cancer and other chronic diseases to the extent resources permit; and health education to promote self-help. While many chronic health problems are not cost-effective or possible to treat, at the least, pain relievers can be provided at low cost.

Health care providers should advise women of all ages of the importance of an adequate diet. Osteoporosis, for instance, which accelerates after menopause, is best prevented through early intake of

adequate levels of calcium. To reduce the risk of bone fracture after menopause, women should be encouraged to improve their diet, exercise regularly, stop smoking, and reduce their consumption of alcohol. Although estrogen therapy is known to retard bone loss, it is not yet a cost-effective public health measure for developing countries (Lindsay 1993).

As women approach menopause (generally between the ages of forty-five and fifty-five), they need counseling about the physical and mental symptoms that may develop as their estrogen levels decline. For most women, these symptoms are relatively mild and subside within two years. In counseling menopausal women and helping them to cope with hormonal changes, health care providers should be instructed to be reassuring and compassionate.

The number of widows in both the reproductive and post-reproductive years is growing in developing countries because women tend to marry men who are older than they are and because of high male mortality, especially in countries with a high prevalence of AIDS. The incidence of widowhood is also increasing in the transition economics of Eastern Europe and Central Asia, mainly due to mortality among middle-aged men from cardiovascular disease, combined with rising divorce rates. With increasing widowhood and divorce, and changing household composition, an increasing number of households are headed by women who may need assistance to meet their domestic, childrearing and economic responsibilities. Many women now live alone, which contributes to their isolation and can make it difficult for them to eat properly and maintain their health. In some places, widows are subject to active discrimination, exacerbated by inheritance laws and customs that fail to protect their rights.

Sustainable solutions will need to rely on efforts to integrate older women into the community and increase their capacity for self-help. Health care providers can relieve the isolation of elderly women and improve their medical and social condition by linking them with support networks such as day centers for the elderly, peer groups, and agencies that provide food and housing. For example, the Center of the Aged in India promotes community-based services such as day centers for elderly people, often run by the elderly themselves (Tout 1989).

# Issues for National Program Planning

Bringing about real change in women's health requires strong government commitment. From poverty reduction to economic efficiency and inter-generational benefits (described in Chapter 1), the arguments are solid for assigning a high priority to women's health. A favorable policy environment and adequate resources are required. Much can be accomplished by redirecting public financing away from tertiary facilities, specialist training, and less cost-effective curative care to the highly cost-effective packages of Essential and Expanded Services (Chapter 3) and by delivering services more efficiently. Involving women in planning and design makes service delivery more responsive to women's needs and improves the utilization and impact of services.

Policymakers should also foster cooperation with the private sector—including NGOs—to get more out of a country's health care resources and to help extend health care to women not reached by government programs. Some countries have established an office in the ministry of health to develop and monitor a women's health policy and action plan, in coordination with focal points on women in other parts of government and with representatives of women's groups. Finally, governments should routinely collect and analyze gender-specific health data as a basis for policymaking, resource allocation, and the design and evaluation of programs.

This chapter discusses the actions that governments can take immediately to improve women's health:

- *Policy support* — adopting supportive legislation, policies, and regulatory mechanisms
- *Financing* — providing financial and other support for specific women's interventions
- *Service delivery* — expanding coverage and improving the quality of services
- *Women's involvement* — integrating women into the planning, implementation, and evaluation process

- *Collaboration* — collaborating with NGOs and private-sector providers
- *Health education* — promoting healthy behaviors and discouraging practices harmful to women
- *Information and evaluation* — collecting gender-specific data and monitoring progress on women's health and nutrition.

## Broadening Policy Support

Governments can use legal and regulatory mechanisms to support improvements in women's health and nutrition that can have far-reaching effects. A health-oriented policy agenda beneficial to women should seek to:

- *Invest more in female education.* Women who are better educated take better care of their own health and that of their children. Investing more in female education and reducing access barriers for women can, therefore, improve both women's health and the health of their families. All girls should be encouraged and given equal opportunity to attend school, including those who become pregnant.
- *Strengthen legislative and other support for women's nutrition.* Four policy initiatives can make a big difference in women's nutritional status: nationwide fortification of foods with iodine and iron; consumer food subsidies and targeted food distribution; dissemination of labor-saving devices for women; and better access for women to agricultural extension services and to credit for small-scale business.
- *Reduce discrimination against females.* Discriminatory policies affect women's health by restricting their ability to adopt healthy behaviors and limiting their opportunities for economic advancement. Examples of such policies are legion, ranging from employment practices that handicap women, to limits on women's control over family resources, restrictions on women's ability

to travel or obtain credit, and laws permitting early marriage for women. In most countries, for example, the legal age of marriage is at least two years lower for women than for men—in most Latin American countries, girls can marry at age fourteen or younger.

- *Abolish practices harmful to women's health.* Policy interventions have the power to influence practices that harm women or are injurious to their health. Through legislative action, legal enforcement, and public education, governments can influence such practices as female genital mutilation, violence against women, and the marketing of tobacco products. Governments can ban certain practices or lend their authority to campaigns to change public attitudes and behavior. They can levy taxes on tobacco products and other harmful substances, restrict their sale, and regulate their advertising. By enacting and enforcing criminal penalties for violence against women, governments can establish a deterrent against such crimes.
- *Remove legal impediments to the effective delivery of health services.* Governments can change laws and regulations that restrict women's access to essential health services. Examples are restrictions on legal access to contraception and pregnancy termination; barriers to service use based on age, marital status, or other factors; spousal consent requirements; and import duties on contraceptives and drugs (Box 4.1).
- *Support appropriate training and delegation of responsibility.* Particularly in rural areas, women's access to health services can be improved by removing legislative and licensing obstacles to allow increased responsibility for health care

providers other than physicians. Unimpeded by such restrictions, nurses and midwives could provide most of the Essential and Expanded Services for women. Modifying current practices successfully, however, will require the support of professional associations representing physicians and other health practitioners.

- *Encourage private-sector participation.* Governments can offer subsidies, tax incentives, loans, clinic space, equipment, free publicity, and other benefits to private-sector providers to encourage them to better meet women's health care needs. To ensure that private providers offer high-quality services, governments can establish performance standards and monitor indicators of service quality. Government regulation can be carried out, for example, through licensing exams and periodic reexaminations of health professionals; accreditation of health worker training programs; facility inspection; and monitoring cesarean sections and maternal deaths.

### **Improving the Equity and Efficiency of Health Financing**

One of the most difficult issues in health policy is deciding how to allocate public resources to achieve the greatest impact on a country's overall health status. The *World Development Report 1993* argues that governments can develop a *national package* of highly cost-effective public health interventions and essential clinical services, which, if broadly extended to the population, could substantially reduce the national burden of disease. Any national health package that is designed to maximize cost-effectiveness and reduce the national burden of dis-

#### **Box 4.1: Women's health and human rights**

Increasingly, human rights safeguards in national constitutions and in regional and international human rights conventions are being used to promote and protect women's health. The leading international instrument on women's equal rights is the 1979 Convention on the Elimination of All Forms of Discrimination Against Women. States that ratify or accede to the convention pledge to eliminate all forms of discrimination against women, including discrimination in health care and family planning. States also agree to provide maternal and other essential health services to enable free and informed choice.

Everyone concerned about women's health—health policymakers and managers, organizations of

health professionals, and women's organizations—needs to be aware of women's rights and to document both violations and conforming practices. For example, health services that require women to obtain their husbands' authorization discriminate against women, can limit their access to necessary health care, and relegate them to a secondary role. Where such requirements exist, they should be repealed. Where they have been repealed, the resulting health benefits should be documented. Governments should develop standards to ensure that laws, policies, and practices comply with their obligations to respect and ensure human rights for women through health practices and concerns as much as in other areas (Cook 1993).

ease will necessarily give considerable weight to health interventions for women, because, as discussed in Chapter 3, many such interventions produce large health gains relative to their costs. Within this framework, the Essential Services for women identified in this paper would represent a subset of the *national health package*.

#### *Selecting interventions for public finance*

The criteria for the selection of and the financing arguments for the Essential Services for women parallel those presented in the *WDR 1993* for the broader national health package. The most cost-effective interventions are selected for inclusion in the package, provided they also address a substantial share of disease burden in a given country. As more resources become available, permitting a more comprehensive package, the next most cost-effective interventions are added.

As the *WDR 1993* argued for the broader national health package (Box 1.1), there is a strong argument for public funding of the subset of public health interventions in the package of Essential Services for women because of their nature as public goods—one individual can use or benefit from them without limiting others' consumption or benefit. The private sector will not supply public goods because it cannot easily charge for them. Public information campaigns about family planning are an example. Public finance is also easily justified for some clinical services because of the large positive spillover effects—externalities—from treatment: a case of a sexually transmitted disease averted or treated, for example, benefits not only the woman treated but others in society (including her offspring) who might later have contracted the disease. Also, fairness and equity argue strongly for the provision of free or highly subsidized Essential Services to poor women. Services for more advantaged groups can be financed out-of-pocket or through insurance.

Not surprisingly, there is a tradeoff between the population covered and the comprehensiveness of health services that are publicly-financed. As argued in the *WDR 1993*, the more narrowly that interventions can be targeted just to the poor, the more comprehensive the services in the package can afford to be. As national health packages become more comprehensive, so too would the women's health interventions included in the package.

Not all the health services financed by government need to be provided by government. Governments can finance maternity care for poor women

through private providers and NGOs, for example. Whether it provides the services itself or not, however, the government has a key role to play in providing policy direction and guidance, promoting efficient and cost-effective approaches, and facilitating private participation in service delivery.

#### *Cost recovery and targeting public expenditures to the poor*

In countries with severe constraints on public funds for health care, user fees may be unavoidable to help support the Essential Services for women and other elements of the national package. Within an appropriately designed price structure, user fees can encourage the efficient use of referral systems and allow scarce public funds to go further. Overall, health system costs can be reduced, for example, by providing free services by paramedical health providers at local health centers while charging for the same services in hospitals, thereby reserving specialized care for complicated cases. Modest user fees that are rolled over to improve service quality can even increase the use of services by the poor (Litvack and Bodart 1993). User fees can also be used to fully recover costs from services outside the national package. Everything beyond the essential or expanded national package is discretionary and could be financed from private sources (out-of-pocket or through insurance).

*Protecting poor women.* In designing user fees, it is important to incorporate mechanisms to protect the poor. There are several types of targeting mechanisms that can be employed. The practical use of any targeting mechanism will depend on its impact on demand, its administrative costs, its technical and managerial requirements, and the level of political support. Poor individuals, identified on the basis of income or nutritional status, can be provided with the Essential Services free or on a sliding scale. Vouchers can be provided, to give the poor a broader choice of providers. Subsidized Essential Services can also be targeted to easily identifiable subgroups of the population, such as the population of a poor neighborhood. Self-targeting is applicable if services have characteristics that imply that only the poor tend to use them (time costs, fewer amenities, for example). These same characteristics, however, may also deter much of the poor population from using services. Finally, public expenditures can be targeted by type of service. If STDs are more prevalent among the poor,

then free or highly subsidized STD services would disproportionately benefit the poor.

If user fees are imposed on the poor, they would have to be very low, and demand for services should be monitored to ensure that they do not restrict access to care. User fees may constitute a severe impediment to low-income women with limited resources and weak claims on household resources. When user fees were introduced for some services at the Ahmadu Bello University Hospital in Zaria, Nigeria, in 1985, the number of obstetric admissions fell. Admissions dropped even further when additional charges were levied in 1988, and maternal mortality rose in the hospital's catchment area (Ekwempu et al. 1990). Similarly, the number of women attending a public outpatient clinic for STDs in Nairobi, Kenya, plummeted by 65 percent after user fees were imposed; male attendance decreased by 40 percent (Moses et al. 1992).

### **Strengthening Service Delivery**

Governments can influence the coverage and quality of health services through attention to the following areas: access to services, delivery strategies, infrastructure, promotion of services, quality of care, number and distribution of female health care providers, and responsibilities of non-physicians.

#### *Increasing women's access to care*

Many factors make it harder for women to get the health care they need. These are some of the most common:

- Adolescents' health needs are ignored and their sexuality is denied.
- Household decisionmakers may be less willing to commit resources for the health care of females than for males, and women generally have less income than men and lack control over family resources.
- Because of multiple roles in the workplace and at home, women often have difficulty getting away at the times when services are offered.
- Cultural norms and lack of resources often make it difficult for women to travel to distant sites for medical care.
- Women often lack information about self-care and about when health care is needed or where it is available.
- Health providers may lack the basic training to provide the Essential Services for women and may be prohibited from practicing certain poten-

tially life-saving procedures except in the presence of higher-level personnel.

To serve the greatest number of women, all Essential Services should be made available at the most peripheral level of care appropriate. Health care at the community level, backed up by referral facilities, is especially important for women, since both normal and complicated pregnancies require a range of medical interventions. Incentives to encourage health care providers to work in remote communities can increase access to services.

#### *Designing delivery strategies to meet women's needs*

Outreach programs can extend the reach of services to girls and women and ensure that referrals to higher-level centers are made as needed. Through home visits to parents who neglected to take their underweight children to a feeding center, for example, a Punjabi child health and nutrition project reduced mortality rates 11 percent for girls under age five in twenty-six rural villages. Because workers from the center supervised the feeding, they were able to redress a food allocation system that favors boys (Pebley and Amin 1991). Where women's travel is severely restricted (as in some Muslim countries), outreach and community-based services are especially important. Mobile clinics can also bring services closer to women.

Clustering services for women and children (such as family planning, postpartum care, and well-baby care) at the same place and time often promotes positive interactions in health benefits and reduces delivery costs for providers and time and travel costs for women (Leslie 1992). In Ethiopia, utilization rose substantially following the integration of curative care, growth monitoring, vaccination, prenatal care, and family planning services (Walley et al. 1991). Programs also need to address constraints on girls and women's time. In a supplemental food program in India, women were found to be more likely to participate if food rations were prepared in advance and women could pick them up on the way to the fields (King et al. 1986).

Integrating services requires some vigilance, however, to avoid overburdening health care providers, planners, and supervisors, or downplaying women's health services. In integrated maternal and child health programs over the past three decades, for example, maternity care was overshadowed by child survival strategies. Also, the more varied the range of services, the greater the need for training and technical resources. Therefore, in developing integrated

programs, every effort must be made to ensure attention to the full set of Essential Services and to reduce the time spent by health care providers on less cost-effective (mostly curative) services.

In some contexts, separate services for women may be appropriate. Adolescent girls, in particular, are not likely to use general maternal and child health services and may prefer facilities that are specially designed to offer young people sympathetic, nonjudgmental counseling. Women may prefer a separate, private setting for fertility regulation. Because of women's limited resources and time and varying needs, it is important that health care delivery points be conveniently located and provide as much choice as possible in specialized and integrated services.

#### *Strengthening the health care delivery infrastructure*

To improve women's health, governments will often need to shift resources from centralized, tertiary-care facilities to health services at the district level. Additional resources may be required to improve the infrastructure of district hospitals, health centers, and health posts; finance ambulances, other vehicles, and communication systems for referrals; expand training for primary health care providers; and set up reliable and efficient supply systems (Box 4.2). Where infrastructure is weak or absent, health facilities need to be strengthened and equipped for essential obstetric functions (including surgery, anesthesia, and blood transfusion). In areas with better infrastructure and functional supervision and support systems, further improvements in the qual-

ity, accessibility, and efficiency of services can be made. Instead of using overcrowded hospitals in urban areas for routine deliveries, for example, birthing centers can be established close to hospitals, as is now being done in Mexico City.

Health workers at all levels require basic equipment and supplies (including contraceptives, iron and folate tablets, safe-birth kits, diagnostics for sexually transmitted diseases, and antibiotics). A World Bank study in India found that a program to reduce anemia among high-risk women failed because only 12 percent of intended beneficiaries were offered iron and folate tablets—and almost 80 percent of these women dropped out because of a shortage of tablets (World Bank 1992c).

#### *Improving the quality of services for women*

Even where health services are readily available and affordable, women may not use them if their quality is poor (Parker et al. 1990; Simmons et al. 1990; CIAES 1991). Studies have found that quality of care is a significant factor in a woman's decision to seek prenatal care (Parker et al. 1990; Locay et al. 1990; CIAES 1991), to give birth at a clinic instead of at home (Sargent 1989), or to continue using contraception (Mensch 1993).

Poor quality services generally result from a lack of infrastructure, insufficient staffing or high absenteeism, lack of female health care providers, inadequate training, insensitivity to patients, shortages of equipment and supplies, and inadequate monitoring and supervision. Several factors may work to create a negative perception of service quality. Inconvenient

#### **Box 4.2: A continuum of care at the district level**

A minimum health delivery system to safeguard women's health should include community-based care with a referral system, health centers, and first-referral facilities that can handle complicated cases. At the community level, the most effective strategy is to emphasize prevention: family planning, safe pregnancy care, early detection and prompt treatment of sexually transmitted diseases, and counseling on nutrition and breastfeeding. Local education programs through schools and the mass media are important to promote positive health practices and reduce gender discrimination and violence. Local health centers, staffed by nurses or midwives and (where resources allow) physicians, should provide family planning counseling and services, maternity care, treatment of complications of unsafe abortion, safe abortion services,

screening and treatment for STDs, and detection and referral of obstetric complications to a higher-level facility. Hospitals, or adequately equipped and staffed health centers with twenty or more beds, should be able to provide essential obstetrical services twenty-four hours a day as well as the full range of family planning and abortion management services. Transportation is often the missing link between a medical emergency in the community such as hemorrhage or obstructed labor and life-saving skills at the referral center. In some settings, a telephone or radio can link communities to medical advice and follow-up. (A more detailed discussion of the continuum of care from community to the first-referral level, particularly for safe motherhood services, is found in *Making Motherhood Safe*, Tinker et al. 1993a.)

hours, limited services, poor treatment by staff, long waits, inadequate supplies, lack of privacy or confidentiality, and overcrowded waiting rooms all reflect poorly on service quality and standards.

There are several key initiatives governments can take to improve the quality of women's health services:

- *Provider competence.* Training curricula and supervisory systems should cover topics related to women's particular health care needs, such as the management of pregnancy-related complications and the special needs of adolescents. Health care workers may have to acquire new technical skills, such as the use of the partograph in labor or manual vacuum aspiration, to manage pregnancy complications and make appropriate referrals. Physicians, midwives, nurses, and community-level workers need an understanding of women's health and an understanding of the social, cultural, and psychological aspects of sexuality and reproduction. Greater gender awareness and good communications skills are also important.
- *Informed choice and counseling.* For many women's health interventions, counseling as well as gender sensitivity is critical. Because women are often unfamiliar with preventive measures and treatment alternatives, health care providers need to provide full information and counseling on these issues to help women assess their own health care needs (Bruce 1990). A study in Rwanda showed that HIV counseling, including a thirty-five minute videotape, was associated with increased condom use and reduced rates of gonorrhea and HIV infection among urban women (Allen et al. 1991).
- *Continuity of care.* Programs should include mechanisms to ensure continuity of care and follow-up, especially for family planning, prenatal and postpartum care, and the prevention and treatment of sexually transmitted diseases. Good provider-client relations are critical to effective follow-up, since patients are most apt to follow the advice of health care providers they know and trust. In addition, procedures are necessary for recording patient history, setting follow-up appointments, scheduling home visits or other outreach services, and ensuring referral to other facilities.
- *Privacy.* Health care providers should ensure that women can speak with them in confidence and that physical examinations are performed with appropriate respect for privacy. In the Philippines, the World Bank is financing infrastructure renovations

(such as water and toilet systems and facility upgrading) to ensure privacy for women during physical examinations and counseling.

#### *Increasing the number of female health care providers*

Some cultures discourage women from consulting male health care providers. In Egypt, for example, most trained health care workers are male, and women often avoid seeking treatment (Krieger and El-Feraly 1991). In such cases, increasing the number of female health workers could improve service quality and use (Chatterjee and Lambert 1989). In some settings, however, similar barriers prevent female providers from working in remote areas. In recognition of this problem, the Aga Khan Development Network in Pakistan has trained women to work in their own communities as lady health visitors.

Female health care providers can play an important role in educating women to recognize their health and nutrition needs. In Gujarat, India, women health workers from the SARTHI project offer victims of violence individual and community support (Khanna 1992). In Longhus, China, women health professionals visit pregnant women in their homes to teach couples how to monitor delivery and recognize danger signs requiring treatment (Shen 1985).

In virtually all developing countries, trained traditional birth attendants, nurse-midwives, midwives, and general physicians are the primary providers of women's health services. And in most developing countries, trained health care providers, particularly midwives and physicians, are concentrated in urban areas. Unsuitable accommodations in rural areas, cultural restrictions on women working in areas where they have no family, or the need to seek employment near their husbands work against the rural deployment of female health care providers. Some francophone African countries guarantee women a position near that of their husband, with the result that a disproportionate number of midwives are assigned to urban hospitals. Some countries have addressed this problem by requiring all newly qualified physicians and nurses to serve in rural areas (WHO 1991c) and by encouraging local communities to provide free housing for health care providers.

#### *Delegating responsibility to non-physicians*

Many countries have laws and practices that make it difficult for health care providers who are not physi-

cians—particularly midwives—to administer certain essential women's health services. In many parts of the world, midwives cannot legally use vacuum extractors or forceps for delivery, give oxytocic drugs without a physician's order, or prescribe antibiotics. Midwives need to be trained so that they are capable of providing independent care, particularly in rural areas. In Zaire, women's lives have been saved by allowing nurses, who are more readily available than physicians during births, to perform cesarean sections (White et al. 1987).

The shortage of physicians (especially women physicians) in some developing countries is well recognized, but less attention has been given to the shortage of trained nurses and midwives, which may be worsening in some areas. A trained nurse-midwife must be able to give the necessary supervision, care, and advice to women during pregnancy, labor, and the postpartum period, and to conduct deliveries and care for the newborn and infant (WHO 1993a). WHO estimates that one midwife can handle about 200 deliveries a year; in a community with a crude birth rate of about 40 births per 1,000 population, therefore, one midwife would be needed for every 5,000 people (Kwast 1991). By these calculations, the number of midwives is seriously deficient in many countries (Kwast 1993). All women should have reasonable access—within two hours wherever possible—to a health center with a nurse-midwife.

Traditional birth attendants currently assist in about 60 to 80 percent of all births in developing countries (Leslie and Gupta 1989). Where reliance on traditional birth attendants is commonplace, superimposing a system of government-supported prenatal and delivery care is likely to be less effective than designing services to complement and strengthen existing patterns of care. A cadre of trained midwives could serve as the link between communities, traditional birth attendants, and the formal health care system.

### **Integrating Women into Health Planning and Implementation**

The best way to ensure that service delivery strategies are designed with women's perspectives and multiple needs in mind is to consult women about the approaches they prefer. Local women should be invited to serve on committees to advise on plans, procedures, and materials. According to outside experts, for example, the success of the Tamil Nadu Integrated Nutrition Project owed much to the prominent role of local women in the project's

design and administration (Kardam 1991). The active involvement of program beneficiaries also leads to increased use of services. In Peru, contraceptive use jumped by more than 50 percent in the project zone after the women's organization Peru-Mujer engaged low-income women in the design of educational materials on family planning (Figuerola 1992).

Bringing female health care providers into leadership positions in the health sector—not only in traditional women's roles, but also in the management, decision-making, and supervision of health planning, financial management, implementation, and research—will also help to shape health care programs for greater impact on women's health. Women need to be included in adequate numbers in clinical studies and trials, so that the findings are relevant to women as well as men.

### **Strengthening Collaboration with the Private Sector**

To achieve widespread and efficient coverage of the Essential Services, governments will have an interest in encouraging a private sector role in financing and service provision. Throughout the developing world, numerous NGOs, financed publicly or privately, provide health and nutrition services to women—often to poorer, difficult to reach groups—and are actively engaged in community development. At the other end of the income range, for-profit, private-sector providers can complement government health services by providing Essential Services to those who can afford them and offering a broader array of health care options beyond the national package.

#### *Nongovernmental organizations*

Governments can assist NGOs to provide women's health and nutrition services by simplifying registration procedures, providing tax incentives and subsidies, and offering training, office space, and supplies. Involving NGOs in program planning, implementation, and evaluation often benefits government programs as well.

Certain characteristics of NGOs may make them particularly well suited to reaching underserved or disadvantaged populations, such as refugee groups, more successfully than government services. Known in the community, they are able to test and adapt new approaches to health care delivery and can complement and enhance government services.

They can also work in areas considered too controversial for government intervention. NGOs may be especially effective in educating communities on women's health issues, distributing supplies, and influencing other sectors to become involved.

NGOs can be effective agents of change by challenging existing services and delivery mechanisms and by bringing pressure to bear on decision-makers to meet women's health needs. Many women's groups, even those that are not involved in delivering health and nutrition services, can play a key role in making women aware of the health services that are available and encouraging their use. They can also serve as a source of information to health program planners about women's priorities and constraints they face in improving their health. In particular, NGOs can promote intersectoral collaboration in efforts to improve adolescent health and to reduce violence against women.

The following examples illustrate the range of NGO involvement in women's health activities:

- The Bangladesh Women's Health Coalition, which began as an urban clinic offering menstrual regulation services, provides a wide range of reproductive health services to approximately 97,000 women and children in urban and rural areas. Its experience demonstrates that providing integrated services and improved care, such as treating clients with respect and ensuring privacy, can increase effective use of services at low cost compared to standard family planning clinics (Kay et al. 1991).
- The National Association of Nigerian Nurses and Midwives developed a communication program to advocate the eradication of female genital mutilation. Nurses and midwives discussed the harmful effects of female genital mutilation during their health education talks in clinics and included it as a topic in nursing and medical school curricula. In one state the association introduced a symbolic dress to replace the traditional scarring used to mark the passage into womanhood (Adebajo 1990).
- The Cairo Women's Health Book Collective has published the only book of practical health information for women available in Arabic (Ibrahim and Farah 1992).

#### *For-profit providers*

Governments can encourage private providers to expand and improve services for women's health by mandating the inclusion of Essential Services for

women in insurance policies and by providing subsidies to ensure their provision of Essential Services to low-income women. Insurance schemes that cover prenatal and delivery care, for instance, are useful in expanding women's health care. In 1984, the Mexican Social Security Institute, financed mainly by employers, spent nearly US\$40 million on family planning services in urban areas—an investment that saved some US\$210 million in maternity care costs, US\$10 million in treatment of incomplete abortions, and US\$130 million in health care for infants (Nortman et al. 1986).

To expand access to health products that require little or no medical intervention (such as certain contraceptives, vitamins, malaria drugs and bed-nets, treatment kits for sexually transmitted diseases, iron and folate tablets, and fortified foods), governments can encourage sales through commercial outlets. Small shops, pharmacies, markets, and street stalls that are conveniently located are an underused resource for bringing health care to women and reducing related travel and time costs. Pharmacies in developing countries now serve about fifteen million contraceptive users and could potentially reach eighty-five million couples who can afford contraceptives (Lande and Blackburn 1989).

#### **Intensifying Public Education**

Public education programs can be used to advocate new policies, change perceptions about unhealthy or harmful practices, promote clinic services, and get feedback from patients to improve the quality of service delivery. Broad public education programs can help reach women who do not know what services are available or where to find them. They can help overburdened health care providers educate women about healthy behaviors, danger signs, and other important health topics, and they can be simplified to reach women with little or no education. They can help convince women that it is worth spending time and money and overcoming barriers to seek health care. They can inform family and community members who control women's access to health care about its potential benefits. Health education in the schools can help teach young girls and boys preventive health practices, human sexuality, and positive gender attitudes.

Finally, public education can help reshape traditional beliefs and customs harmful to women's health. Because women's health is heavily influenced by socioeconomic and cultural factors, effec-

tive public education programs must be designed to reach far beyond the clinic walls.

### *Promoting health services and healthy behaviors*

Both women and other family decisionmakers need to understand the importance of maternity care, preventive services, and good nutrition. Information on women's health motivates women to adopt healthy practices and encourages supportive behavior from other family members. Because of this, broad public education programs are needed to promote women's health services and healthy behaviors. Public education programs can also help women locate appropriate health services and convey information about clinic hours, costs, and requirements for access. In areas where husbands, relatives, and community members are the principal decisionmakers on women's access to health care, these groups should be targeted to receive messages that promote women's health services.

### *Advocacy for policy change*

Advocacy programs are designed to increase awareness of women's health problems among policy-makers (political, medical, media, and religious), to create a policy environment favorable to health reform both within and beyond the health sector, and to lobby for improved women's health services. For example, the national women's commission in Chile has adopted an extensive program to promote the criminalization of domestic violence, document the dimensions of this problem, organize community awareness campaigns, and establish crisis centers that provide legal and psychological support (Servicio Nacional de la Mujer 1991).

### *Behavior change*

The first step in influencing health-related behaviors is often to make women and men aware of women's health problems and high-risk conditions. For example, most women are completely unaware of the warning signs for complications associated with pregnancy and so do not respond properly to them. Even violence against women may be viewed as normal and not a cause for seeking assistance. Public education programs can promote actions in the home or community to improve women's health and prevent future health problems. Public education programs can also be used to discourage unsafe practices that harm women's health (such as female

genital mutilation, risky sexual behavior, inadequate food consumption during pregnancy, unsafe delivery practices, and smoking). While some behaviors have been well defined through research and programmatic activities, many women's health and nutrition issues still need to be assessed before specific public education strategies and messages can be developed.

Although women constitute the major audience for health-related education, people who influence women's behaviors (parents, husbands, in-laws, and village leaders) should also be targeted. Husbands have a major impact on women's workload, diet, exposure to sexually transmitted diseases, and use of health services and contraception.

Since the mass media now reach vast audiences in developing countries, they have enormous potential to communicate information along with new values and ideas. Mass media campaigns have been used for family planning, nutrition, breastfeeding promotion, and AIDS prevention. Songs, radio programs, and films have been especially effective in informing adolescents about responsible sexual behavior and pregnancy. In Latin America, a study found that two popular songs promoting abstinence influenced teenage girls to discuss sexuality issues with their parents and others (PCS 1992).

Because women have lower literacy levels than men and may have less access to mass media, personal sources of information, such as friends, relatives, teachers, outreach workers, and leaders, remain important to behavior change. Public education programs need to ensure that mass media messages are reinforced by health care providers to reach women directly.

### **Meeting Information Needs**

A major constraint to improving women's health services has been a lack of information on the causes, severity, and distribution of women's health and nutrition problems, as well as on the relative effectiveness and cost of various interventions at the local level. Both donors and governments must recognize that research, monitoring, and evaluation are integral to program development and service delivery. Inadequate information leads to ineffective programs and wasted resources.

### *Health status indicators*

Biomedical, epidemiological, and socioeconomic data are needed to assess women's health status and

evaluate health interventions for women. Such data are often lacking or of poor quality. In particular, many developing countries lack a complete and accurate vital registration system. Even where vital registration systems exist, the cause of death is often incorrectly reported or omitted altogether. Maternal mortality is often underreported due to a variety of social, religious, emotional, and practical factors, such as the stigma of abortion, the desire to avoid an official inquiry into the cause of death, and the failure to indicate pregnancy as the precipitating cause of death (WHO 1991a).

Governments should insist that health and nutrition data be disaggregated by gender as well as age group. Breaking data down into five-year or smaller age groupings provides a clearer picture of the needs of key groups such as adolescents. Population-based studies and data on morbidity are especially needed (ICRW 1989). Data on women's life circumstances and needs would promote better understanding of the social, cultural, legal, economic, and psychological factors that affect women's ability to protect their own health. Improved data on women's health status can contribute to more targeted interventions and more effective program design, monitoring, and evaluation (Leslie 1992).

Some health problems affecting women—those related to abortion, adolescent pregnancy, female genital mutilation, and domestic violence—are controversial and difficult to document. Even in industrialized countries, their incidence and consequences often go unreported or are misclassified. But where health care providers are alerted to problems such as domestic violence, women do report abuse (Heise et al. 1993). Still other problems (such as maternal mortality) are difficult to measure because their relative infrequency makes it necessary to study large populations at substantial expense.

Given the paucity of data on women's health, health agencies should make full use of existing data sources, including health facility data, patient records, vital statistics registration, population-based surveys, and surveillance systems. Sources outside the health sector (such as police records) may be needed for information on violence against women or substance abuse. Whenever possible, programs should rely on more efficient use of available data, supplemented by additional research as needed. Women's organizations and NGOs can be especially helpful in disseminating research findings.

Case histories, focus group discussions, in-depth interviews and observation, confidential inquiries,

verbal autopsies, and death certificate reviews are also important sources of information on women's health. Qualitative research on intended beneficiaries and program personnel is especially important in designing programs for women. Program designers need to know whether the health problems they have identified are women's priority concerns; the underlying causes (cultural, attitudinal, economic) of health problems; and the range of acceptable, affordable, and effective solutions. Local investigators, including women, should be involved in all aspects of related research.

### *Program design*

All health and nutrition projects should be designed in light of the culture-specific health needs of women (by age group), the effectiveness, cost and feasibility of interventions to address them, and the various factors that influence women's health. This analysis would include, for example, women's access to disposable income and transport, their decision-making authority, cultural norms affecting travel and male/female interaction, geographic distribution of health centers and hospitals, perceptions about the quality of care, and the different tasks women perform. In many cases, available data are insufficient to plan and manage health programs, and agencies may need to conduct new studies to strengthen program design.

- *Knowledge, attitude, and practice surveys.* Large-scale surveys and community-level studies of health and nutrition behaviors have proven valuable for program design and evaluation. Additional studies are needed to provide insight on the users' perspective and the local cultural and social context; to identify individual, social, and economic costs associated with the prevention and treatment of disease and injury; to assess health care providers' understanding of women's needs; and to evaluate the effectiveness of the service delivery system.
- *Operations research.* Operations research can be used to test different approaches for delivering services and to identify and overcome program obstacles. For example, WHO has supported research on interventions to reduce maternal mortality, and the Population Council is assessing alternative approaches to prenatal and obstetric care in several countries.
- *Cost-effectiveness analysis.* Research on alternative approaches can help to clarify choices regarding resource allocation.

Field-based research can determine the most cost-effective combination of community-based, referral, and follow-up services for women in specific settings, as well as the appropriate level of care for the management of pregnancy and obstetric complications.

#### *Program monitoring and evaluation*

Where data are available, health status indicators—changes in the prevalence of iron-deficiency anemia among pregnant women, for example, or in the proportion of deaths from obstructed labor or hemorrhage—can be used to measure program impact. Indicators should be developed in accordance with each country's resources, priorities, and needs. (A list of indicators for measuring women's health status is provided in Annex D.) In many low-resource settings, data on program impact may be difficult and expensive to obtain, resulting in greater reliance on process indicators. Measuring program inputs and outputs provides program managers with timely feedback on program progress and affords an opportunity to adjust interventions and treatments as indicated. For example, the proportion of pregnant women who receive iron and folate tablets and counseling on the danger signs of pregnancy could indicate whether prenatal care services are adequate. A high proportion of appropriately treated obstetric

complications would indicate an effective case detection, management, and referral system.

A major constraint to effective program monitoring and evaluation is the lack of an effective management information system in most developing countries. The system should integrate data collection and analysis into program operations and ensure that the results are provided to central and field-level managers to facilitate decision-making. Limiting the number of indicators to those integral to program operations can simplify data collection and analysis and ensure timely feedback.

Where monitoring systems are weak, alternative strategies can be introduced. In areas where home births are common, for example, periodic household interviews may be desirable. Some aspects of service quality can be inferred from process indicators such as the number of contraceptive methods available and method mix among contraceptive users. Additional efforts are needed to assess other indicators of service quality (client waiting times, travel distances, and satisfaction with services received), since quality of care is a major factor affecting women's utilization of health services. Direct observation of client-provider interactions, interviews with clients and staff, focus group discussions, and sample surveys can all be used to elicit information.

# The Role of International Assistance

Sustainable improvement in the health systems of developing countries depends foremost on a nation's commitment to the health and well-being of all its people—men and women, the poor and the better-off. Foreign assistance can play a critical catalytic and supportive role, however, in improving women's nutrition and health by focusing policy concern and ensuring adequate resources. Foreign assistance agencies—including the World Bank—can have an impact on women's health far beyond their monetary contribution by making policymakers aware of the social and economic gains to be realized from lowering rates of female death and disability. Perhaps most important, international agencies can help by furnishing decisionmakers with lessons gleaned from other countries' experience and by supporting interventions that have proven to be the most cost-effective.

## World Bank Programs in Women's Health and Nutrition

World Bank lending for health, population, and nutrition has increased five-fold over the last six years. Between 1986 and 1993, the World Bank allocated nearly US\$5.7 billion to more than one hundred health, population, and nutrition projects that have women's health components (Annex E). These projects represent 90 percent of the Bank's projects in this sector since 1986. Nearly half the projects with women's health components are in Sub-Saharan Africa, one-fourth in Asia, and one-fifth in Latin America (Figure 5.1). Following are the major types of activities that the Bank has supported since 1986:

- *Safe motherhood.* More than fifty World Bank-supported projects that contain safe motherhood components are now underway. In Indonesia, the Bank is supporting the expansion of safe motherhood services to the village level. In Zimbabwe, the Bank and other assistance agencies are collaborating to upgrade maternity care

facilities, improve referral systems, and train nurse-midwives. In China, the Bank funds training in maternal health care for female physicians and assists in making emergency obstetric services more accessible to poor women. Round-table conferences on health in Chad, China, and the Philippines have highlighted safe motherhood and women's health, and in Benin, the government held central and regional workshops to review its maternal health and family planning programs.

- *Family planning.* The World Bank has supported family planning projects in a variety of settings. A Bangladesh project supports family planning and maternal and child health services provided by female outreach workers. In the Ukraine, where there are 1.5 abortions for every birth, the Bank is discussing a project with the ministry of health to strengthen maternal and child health services and provide contraceptive supplies to reduce women's reliance on abortion.
- *Sexually transmitted diseases and AIDS.* Control of sexually transmitted diseases and AIDS is an important concern of the World Bank. In Lesotho, the Bank is supporting prevention, diagnosis, and treatment services for women of reproductive age and research on effective ways to extend services to commercial sex workers. Brazil's Bank-assisted National AIDS/Sexually Transmitted Disease Control Program includes mass media campaigns, education in the workplace, surveillance, research, and efforts to reach commercial sex workers.
- *Adolescent sexuality.* The Bank has assisted the governments of Lesotho and Nigeria to develop school-based family life education programs and mass media campaigns to persuade adolescents to delay childbearing. Indonesia's population project includes clubs for young people and family planning messages on television, radio, and video aimed at youth.

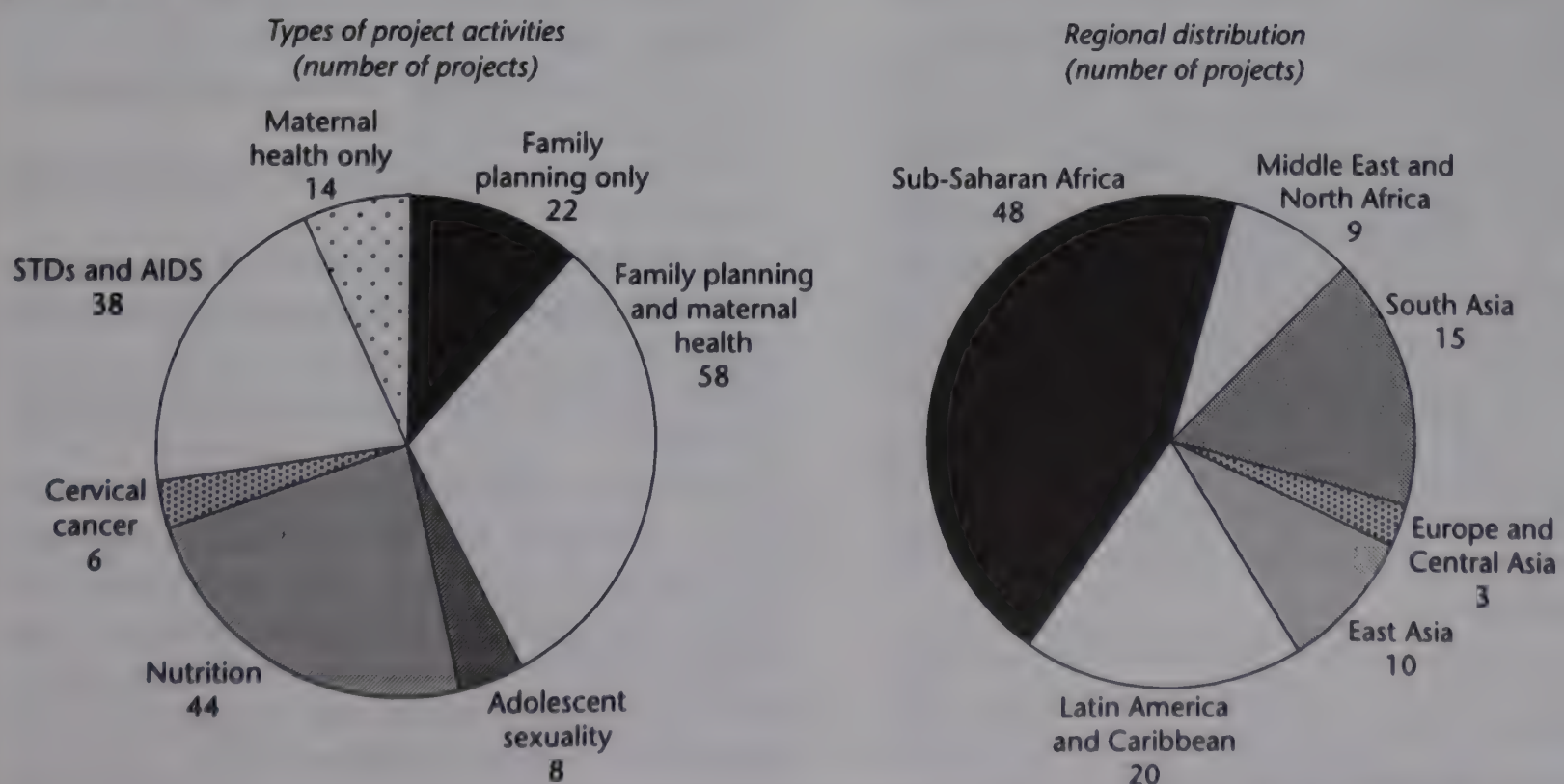
- **Nutrition.** Several nutrition projects have included activities to address undernutrition and micronutrient deficiencies in girls and women. In India, projects seek to meet the protein-energy and micronutrient needs of children and lactating women through supplements. In Niger, the Bank is supporting the use of labor-saving devices to reduce energy expenditure, and in Malawi, an effort is underway to increase food production and income generation in order to increase women's protein intake.
- **Gynecological cancers.** Programs in Brazil, Chile, Ecuador, and Venezuela include detection and early treatment of cervical and breast cancer. A Bank project in Romania supports national efforts to reduce deaths from cervical and breast cancer by developing a program for the early detection of gynecological cancers at a major teaching and research institute.
- **Gender sensitivity in disease control.** In India, the World Bank has financed an innovative program to ensure gender sensitivity in disease-control efforts. The Leprosy Elimination Program provides training for female health and public education workers on the sociocultural factors that impede the identification and treatment of leprosy in women and on ways to promote self-care among women.
- **Other sectors.** Bank projects also address the broader socioeconomic determinants of women's health. In Bangladesh and Burkina Faso, World Bank-assisted education projects include actions to improve female enrollment in

schools. A women in development project in the Gambia includes a safe motherhood component to strengthen the community-based treatment and referral system using trained birth attendants. The Bank-financed Human Resource Development Project in Senegal includes a public education program aimed at men and religious leaders to counter negative attitudes toward family planning. In Ghana, a Bank transport project provides supplemental food for women laborers.

Newer Bank projects focus more directly on women's health needs and are more comprehensive. For example, the Women's Health and Safe Motherhood Project being developed in the Philippines includes services related to maternal health, family planning, sexually transmitted diseases, AIDS, and cervical cancer. The project provides support for NGOs working on women's health issues in the areas of communication, training, logistics, information systems, and partnerships with other agencies. Programs on such emerging issues as violence against women are also being developed.

Increasingly, population projects are adding reproductive health services to existing family planning programs. In Indonesia, the new Bank-financed population project builds on the government's successful family planning program with the aim of broadening community-based health services to meet women's health needs. The project includes training midwives to provide maternal health care at the village level, providing contraceptive information and services to adolescents,

Figure 5.1: World Bank-supported population, health, and nutrition projects with women's health components, FY 1986-93



and conducting public education on reproductive health and the role of women in society. This expansion represents a shift from the government's earlier strategy, which was more narrowly focused on increasing contraceptive acceptability and use and—since 1986—on promoting private-sector family planning services.

### **Partnership**

Making substantial and lasting improvements in women's health will take a multisectoral approach across a broad range of issues. Assistance agencies should coordinate their inputs to maximize each agency's strengths and capabilities. Country programs could benefit from assistance agencies' comparative advantage in such areas as training, technical support, institutional development, and logistics management. Within the United Nations system, WHO serves as the lead technical agency on health. WHO has prepared technical guidelines on many topics related to women's health, such as essential obstetric services and the Mother-Baby package, and is currently developing a Healthy Women Counseling Guide. Many of the recommendations in this paper are derived from WHO's work. UNDP supports broad poverty reduction programs, UNICEF addresses the problems of girls, and the UNFPA provides family planning and related services. In addition to being the largest single provider of international financial assistance in the health sector, the World Bank's strengths include its ability to conduct sector and economic analysis to examine issues and appropriate strategies and to engage in policy dialogue with core ministries of government on resource allocation to support priority programs.

Bilateral agencies are also making important contributions to women's health. The Swedish International Development Authority (SIDA), which gives high priority to sexual and reproductive health, has collaborated with the World Bank and other assistance agencies in country programs. SIDA has developed a strategy on sexual and reproductive health that supports the concept of essential reproductive health services and encourages governments to ensure that these services are available. Several other bilateral assistance agencies have incorporated reproductive health care as a priority in their assistance programs.

International NGOs have national affiliates with close ties to the communities they serve, which often puts them in a good position to ensure that information is made available, controversial

issues are addressed, and community needs are recognized. International NGOs can increase awareness, serve as a bridge between national organizations and international resources, stimulate debate and action, assist in the formulation of policy and development of programs, conduct research, and provide technical assistance. International organizations of health professionals such as physicians, nurses, and midwives can be helpful in establishing norms and standards for service delivery and disseminating information on effective approaches and new technologies.

Collaboration among assistance agencies has helped to advance women's health programs. For example, the Inter-Agency Group for Safe Motherhood supports safe motherhood programs. World Bank projects in Bangladesh, Indonesia, and Zimbabwe have strengthened coordination among multilateral, bilateral, and nongovernmental organizations, improving the delivery of maternal health and family planning services based on pilot project experience. U.N.-sponsored international conferences on women, social development, and population provide a forum for discussing women's health issues at the policy level and an opportunity for bringing concerns to the forefront of the development agenda and to the attention of a wide international audience.

### **An Agenda for Women's Health and Nutrition**

International agencies can take six major steps to promote improvements in women's health and nutrition:

- Persuade governments to give higher priority to women's health and nutrition
- Identify an institutional base for women's health and nutrition programs
- Promote greater use of gender-based data and pilot studies
- Support cost-effective interventions for women
- Increase attention to changing health-related behaviors
- Involve women in program planning and implementation.

Knowledge, policy support, and program development related to the diverse health problems affecting women vary greatly among countries. For example, strategies to address issues of new but increasing concern (such as gender violence, management of unsafe abortion, and sexually transmitted diseases among adolescents) are relatively untested and could benefit from external assistance

to support consciousness-raising, policy analysis, and pilot programs.

### *Policy priorities*

In many developing countries, women's health and nutrition rank low among national priorities, even within the health sector. Assistance agencies can help to make the case for greater attention to women's health, based on the multiple economic and social payoffs described in Chapter 1. Arguments for increased funding for women's health and nutrition programs should stress two key points: the far-reaching effects of a woman's poor health and early death on her family and community as well as the national economy, and the availability of cost-effective interventions to prevent or mitigate many of the leading causes of death and disability among women.

Women represent a disproportionate share of the poor and so deserve particular consideration in programs to mitigate the adverse impact of structural and sectoral adjustment, particularly in the areas of nutrition and health. Related external assistance could take traditional forms, such as food-price subsidies and food distribution, or more innovative forms, such as social, health, nutrition, and education interventions designed to reach female children, adolescents, and adults.

For multilateral and multisectoral agencies such as the World Bank, policy dialogue needs to extend beyond the ministry of health to include the ministries of finance, planning, education, and women's affairs, and other sectors as appropriate. For most women's health issues, policy discussion should also include key decisionmakers and influential groups outside the government, such as health professionals, women's groups, and business leaders.

### *Institutional base*

International assistance agencies can designate an individual, department, or committee to take responsibility for women's health and nutrition programs and request that the ministries of health also establish an institutional base for woman's health programs. This base can serve many purposes, including giving greater visibility to these programs, coordinating relevant activities, initiating new programs or introducing new elements to existing programs, and promoting collaboration with other sectors. Experience with many health interventions has shown that an institutional base focused in a partic-

ular area can be highly effective in driving new initiatives. Because women's health and nutrition programs encompass a variety of service delivery modes and require collaboration with agencies outside the health sector, an institutional base can ensure program direction and coherence, to see that objectives are met and that the system is operating smoothly.

### *Targeted research*

Without gender disaggregated data, women's health problems can be easily overlooked. International agencies can support analyses that differentiate between males and females and can request that routine data reports include such differentiation. Disaggregation by age group is also important for program targeting.

Effective program design requires research on a wide range of issues, including macroeconomic factors, women's socioeconomic and health status, and local conditions. Assistance agencies should support studies designed to:

- Broaden knowledge and understanding of women's health problems in a country
- Bring about policy dialogue among government agencies, program beneficiaries, and health care providers
- Improve the database for the design and implementation of projects
- Mobilize resources in support of women's health programs.

Because of the influence of local social and cultural factors, pilot projects can be especially important for identifying and testing approaches to improve women's health.

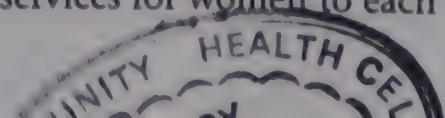
In a process known as "sector work," the World Bank often compiles background material to support discussions on health policy and to assist governments in developing programs and projects. In Brazil, for example, sector work documented the dimensions of women's health problems (including inadequate prenatal care, high rates of unsafe abortion, and unnecessarily high rates of cesarean section). In India and Uganda, sector analyses helped to identify women's health problems and constraints to women's use of health services, information that was used to guide health interventions to address women's needs.

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### *Support for cost-effective services*

Foreign assistance agencies can help governments match health services for women to each country's



own profile of women's nutrition and health status. Where the health infrastructure is weak, assistance agencies should focus on ensuring that the Essential Services for women are widely available. In countries with adequate resources and a policy environment favorable to women's health, assistance agencies can help to expand and improve ongoing programs, identify additional needs, and help ascertain which interventions and delivery approaches are most cost-effective. In most developing countries, assistance is needed to expand women's health and nutrition interventions on a national scale and to incorporate new components such as sexually transmitted disease services and education on nutrition and safer sex.

Assistance agencies need to examine their own policies and program priorities in light of the cost-effective approaches identified in the World Development Report 1993. For example, few assistance agencies support abortion management, promotion of contraceptives to adolescents, and cervical cancer services. The economic and social costs for missing the opportunity to include these services in assistance programs are great: unsafe abortion is the third largest cause of maternal mortality; pregnancies among unmarried adolescents are increasing in many developing countries; and worldwide almost eight in ten new cases of cervical cancer occur in developing countries. In reorienting their women's health programs, assistance agencies need to incorporate a life-cycle approach and to give more emphasis to early prevention and behavior change.

### *Behavior change*

International assistance agencies can play a major role in influencing health agencies to give greater attention to preventive services and become more involved in behavior change interventions outside the traditional health care delivery system. Assistance agencies can facilitate links between health agencies and public and private institutions in other fields, provide funds and technical expertise for undertaking behavior change interventions, and support mechanisms to exchange information on effective strategies.

### *Women's participation*

Assistance agencies can do much more to involve women in health programs. Key areas for action include:

- Ensuring adequate representation of women in their own professional staff
- Including women on project planning, monitoring, and evaluation teams
- Encouraging national health ministries to increase women's representation in high-level decisionmaking positions
- Involving women's organizations and women who are experts in their field in all phases of program planning and implementation
- Incorporating mechanisms for soliciting women's feedback on projects
- Promoting procurement of supplies and advisory services from women-owned businesses and women's cooperatives.

Assistance agencies can help to identify areas in which women's inputs would be useful and facilitate their involvement. In addition, assistance agencies can insist that collaborating agencies publicize job vacancies, new contracts, and other opportunities so that women can compete for them. Links with women's groups, and particularly women's income-generation projects, should be explored. For example, women's groups could create clinic signs, banners, badges, and other promotional materials.

## **Regional Problems and Priorities**

The following paragraphs highlight key health problems and program priorities for women in each region of the developing world.

### *Sub-Saharan Africa*

Sub-Saharan Africa has the world's highest fertility and maternal mortality rates. Maternal health problems are exacerbated by poor prenatal and delivery care and unsafe abortion, which accounts for 20 to 40 percent of the maternal mortality in Africa. Africa also has one of the highest adolescent pregnancy rates in the world. By age eighteen more than 40 percent of women in Côte d'Ivoire, Mali, and Senegal have already given birth (Population Reference Bureau 1992).

Sexually transmitted diseases and HIV/AIDS are a major cause of disability and death among African women and represent more than half of the sexually transmitted disease burden among women in developing countries. Infertility and cervical cancer, often caused by sexually transmitted diseases, are common in some African countries. Female genital mutilation is practiced in several countries of the region.

Priorities for improving women's health in Africa include: increasing access to maternity care, family planning, safe services for abortion management, and sexually transmitted disease services and preventing genital mutilation, HIV infection, and violence against women. To deliver the necessary clinical and preventive services—and especially to extend services to rural areas—many countries will need to strengthen their health care infrastructure. Special initiatives for adolescents are needed because of the large numbers of young females at risk and the great potential for improving health through the postponement of sexual activity and childbearing, safer sex practices, and good nutrition.

### *South Asia*

Throughout most of South Asia, women of all ages suffer the effects of gender discrimination. Discrimination and neglect are estimated to cause one in six deaths of female infants in Bangladesh, India, and Pakistan. In some areas, gender-specific abuse is common, including sex selection through abortion, female infanticide, and injury and death associated with wife abuse and dowry demands. Other forms of discrimination, such as giving less food to female household members, restricting their access to health services, and imposing a higher physical work burden on girls and women, are also common. Women's lower status is also evident in lower school enrollment and retention rates.

Many women lack access to health care, especially maternity care, contraceptives, and safe services for abortion management. South Asia has a higher proportion of growth stunting among girls and anemia among pregnant women than any other region. Only one in three women receive prenatal care or have a trained attendant at delivery. Consequently, rates of death and disability associated with pregnancy and childbirth are high. Sexually transmitted diseases are widespread, and HIV infection is on the rise.

The key component of an agenda for women's health in South Asia is to combat the effects of discrimination by expanding access to health services, conducting community education and outreach programs, increasing the proportion of trained women health providers, and publicizing the importance of protecting female health. Expanding and improving the quality of women's health services are also important. Health programs need to give greater attention to the nutritional status of young girls and adolescent women, as well as to detection

and prompt referral of pregnancy-related complications. Intersectoral initiatives are needed to address the problems of early marriage and violence against women.

### *East and Southeast Asia*

In certain countries, such as Laos and Cambodia, women's health conditions resemble those in South Asia or Africa. In other parts of East and Southeast Asia, women are attaining levels of health, education, and social status typical of middle-income countries. In East Asia, 95 percent of women benefit from trained assistance during delivery, although less than half of all deliveries take place in institutions. There are considerable regional and urban-rural differences, however, reflecting the influence of lifestyle and economic status on disease patterns. For rural women, infectious diseases are a major cause of death, while urban women have higher rates of cardiovascular and cerebrovascular diseases and cervical and breast cancer. East Asia has the highest incidence of cervical cancer among the developing regions.

Maternal morbidity and mortality rates remain high in several countries in the region due to poor coverage of maternity care (WHO 1991). Contraceptive prevalence is relatively high in Indonesia, the Republic of Korea, Malaysia, and Thailand, but in some countries, such as the Philippines, a full range of contraceptive methods is not available. HIV/AIDS is growing more rapidly in Southeast Asia than in any other part of the world (USAID 1991). Increasingly, young adolescent women are entering prostitution, often due to economic hardship or force.

Smoking and alcohol abuse among women are growing concerns in some parts of East Asia, as multinational tobacco firms increasingly target women with sophisticated advertising. Women's health status is also influenced by discriminatory practices, such as sex selection in China and the Republic of Korea and female genital mutilation in parts of Indonesia and Malaysia.

Priorities for women's health services are likely to vary considerably throughout the region, depending on existing health infrastructure and policies. In countries with limited services, health agencies will necessarily concentrate on expanding and improving them, especially to ensure access to maternity care, family planning, and safe abortion services. Most countries in the region need to give additional attention to early prevention among young and

adolescent girls, especially in stressing the dangers of unprotected sex, tobacco use, and substance abuse. Where resources permit, cancer screening and treatment should be provided.

#### *Middle East and North Africa*

In the Middle East and North Africa, fertility rates are among the highest in the world, almost equal to those of Sub-Saharan Africa. High fertility and early childbearing contribute to poor health among women. Contraceptive prevalence rates are low, and access to health care is poor. Cultural norms against contact with men keep many women from using existing health services. Female genital mutilation is practiced in some areas. Women's low status and literacy levels, as well as lack of information and data on women's health issues, are major obstacles to improvements in female health.

The major priority in the region is to improve women's access to health care by better meeting their needs for female health care providers, convenient locations, and information on healthy behaviors. Better maternity care is a pressing need in most countries in the region. Women could benefit substantially from improved access to contraception and a broader choice of methods.

#### *Latin America and the Caribbean*

In many Latin American countries, noncommunicable diseases cause more deaths and disability to women than communicable diseases and maternal and perinatal causes combined. Nevertheless, maternal mortality ratios in the region are higher than in other areas with comparable income levels, due in large part to unsafe abortion. Fertility is moderately high in most countries. Services are often inefficient and of poor quality. Tertiary and higher-level health facilities are overutilized for maternity care, and some countries have abnormally high rates of cesarean section deliveries, which adds to women's health risks.

Unwanted pregnancy, particularly among adolescents, is an important problem. Although abortion is illegal in most countries in the region, abortion rates in some areas are among the world's highest. Sexually transmitted diseases are a growing concern. Though the AIDS epidemic is in the early stages, the number of cases among women is projected to rise sharply by the year 2000 (PAHO 1993). Violence against women is increasingly recognized as a source of poor mental and physical health.

As the proportion of older people rises, problems such as diabetes, cardiovascular and cerebrovascular diseases, and osteoporosis are becoming more significant among women. Breast cancer is increasingly common, particularly in the higher-income countries. Cervical cancer is also on the rise. Women's risk of disease is raised by factors such as high rates of smoking, obesity, and anemia; almost one in three women in the region is anemic (PAHO 1993).

The agenda for improving women's health in Latin America includes ensuring that low-income women have access to health care services, especially maternity care and family planning; developing strategies to meet the reproductive and sexual health needs of adolescents; addressing the problems of unwanted pregnancy and unsafe abortion; and promoting healthy behaviors such as good nutrition, safer sex practices, and avoidance of smoking and obesity. Some countries will need to give more attention to specific problem areas such as overuse of tertiary health care facilities, unnecessary medical procedures, HIV/AIDS, violence against women, and inadequate assistance to women beyond reproductive age, including management of cervical and breast cancers.

#### *Eastern Europe and Central Asia*

Women's health status in Eastern Europe and Central Asia is lower than might be expected, given high levels of female education and reasonably well-developed health infrastructure. Shortages of drugs and supplies are common, as are outdated health care practices that are not always cost-effective. Although almost all women receive prenatal care, excessive emphasis is placed on diagnostic tests and not enough on counselling and prevention. Abortion, which is legal in many countries in the region, is the most common method of fertility regulation because contraceptives are largely unavailable. In fact, there are more abortions than live births. The needs of divorced, widowed, and elderly women require greater attention. In several countries, women's health status is worsening, and their access to such services as legal, state-subsidized abortions is being threatened.

Key initiatives in a women's health agenda for the region include making family planning information and services more widely available to reduce reliance on abortion, updating services through training to improve clinical and consumer-oriented practice, ensuring that adequate drugs and supplies are available, increasing the

emphasis on prevention (particularly avoidance of tobacco, the value of exercise, and good nutrition), and addressing the needs of women beyond reproductive age.

### **Moving from Rhetoric to Action**

The task ahead is to apply what we know about women's health needs to concrete actions. We know that many women's health problems could be prevented or mitigated through low-cost interventions. We know that these interventions can work in low-income settings. We know that investments in women's health have multiple payoffs for the

national economy, the community, individual families, and the next generation. What remains to be done is to pierce the veil of indifference and inertia that inhibits women's health and nutrition programs. Assistance agencies, in partnership with local change agents, can press for a new vision of women's health as an indispensable part of sustainable development efforts. Given a mandate for change, agencies and individuals can advance new initiatives and support more effective allocation of existing resources. For the countless millions of women struggling to meet their family's daily needs and make a better life for themselves and their children, such changes cannot come too soon.



# Annex A. Working Papers and External Consultations

## Working Papers for Women's Health and Nutrition: Making a Difference

George T.F. Acsadi and Gwendolyn Johnson-Acsadi, "Socioeconomic, Cultural and Legal Factors Affecting Girls' and Women's Health," 1993.

Jill Gay, "Women's Access to Quality Health Services and Empowerment to Promote Their Own Health," 1993.

Lori Heise with Jacqueline Pitanguy and Adrienne Germain, "Violence Against Women: The Hidden Burden", World Bank Discussion Paper, 1994.

Joseph Kutzin, "Obstacles to Women's Access: Issues and Options for More Effective Interventions to Improve Women's Health," HRO Working Paper Number 13, 1993.

Kathleen Merchant, "New Directions in Policies to Improve the Nutritional Status of Women," 1993.

May T. Post, "Reproductive Tract Infections, HIV/AIDS and Women's Health," HRO Working Paper Number 15, 1993.

Judith Senderowitz, "Reassessing the Passage to Adulthood: Issues and Strategies for Young Women's Health," World Bank Discussion Paper, 1994.

Jacqueline Sherris, Elisa Wells, Vivien Davis Tsu, and Amie Bishop, "Cervical Cancer in Developing Countries: A Situation Analysis," 1993.

Kajsa Sundström, "Abortion: A Reproductive Health Issue," 1993.

Mary Eming Young, "Women's Health Beyond Reproductive Age: The Picture in Developing Countries", 1993.

## External Consultations

May 17-21, 1993. *Women's Health and Nutrition Seminar, Rockefeller Foundation Study and Conference Center, Bellagio, Italy*: Participants at this meeting included Andrew Arkutu, Country Director, UNFPA, Tanzania; Meera Chatterjee, World Bank, India;

Mirai Chatterjee, Self-Employed Women's Association, India; Ayse-Akin Dervisoglu, Maternal and Child Health/Family Planning, Ministry of Health, Turkey; Carmen Simone Grilo Diniz, Colectivo Feminista Sexualidade Saude, Brazil; Sambe Duale, Academy for Educational Development, U.S.A.; Mahmoud Fathalla, Rockefeller Foundation, Egypt; Anibal Faundes, Population Council, Brazil; Judith Fortney, Family Health International, U.S.A.; Malgorzata Fuszara, Center for Social-Legal Research on the Situation of Women, Institute of Applied Science, University of Warsaw, Poland; Kirrin Gill, World Bank, U.S.A.; Sandra Kabir, Bangladesh Women's Health Coalition, Bangladesh; John Kevany, Department of Community Health, Trinity College, Dublin University, Ireland; Ana Langer, Instituto Nacional de Salud Publica, Mexico; Florence Manguyu, Medical Women's International Association, Kenya; Indra Pathmanathan, World Bank, U.S.A.; Khama Rogo, Dept. of Ob/Gynecology, University of Nairobi, Kenya; Helen Saxenian, World Bank, U.S.A.; Jill Sheffield, Family Care International, U.S.A.; Ann Starrs, Family Care International, U.S.A.; Anne Tinker, World Bank, U.S.A.; Marijke Velzeboer, Center for Population Options, U.S.A.; Judith Wasserheit, Division of STD/HIV Prevention, Centers for Disease Control, U.S.A.

March 8, 1994. *Review of the final draft of Women's Health and Nutrition-Making a Difference, St. James Hotel, London, England*. Participants at this meeting included Rashim Ahluwalia, International Society of Red Cross and Red Crescent Societies, Switzerland; Berit Austveg, Ministry of Foreign Affairs, Norway; Tim Black, Marie Stopes International, U.K.; Xavier Coll, World Bank, U.S.A.; Pat Daly, World Bank, U.S.A.; Janet de Merode, World Bank, U.S.A.; Denys Fairweather, International Federation of Obstetrics and Gynecology, U.K.; Adrienne Germain, International Women's Health Coalition, U.S.A.; H. Nardho Gunawan, Ministry of Health, Indonesia;

Marianne Haslegrave, Commonwealth Medical Association, U.K.; Lori Heise, Pacific Institute for Women's Health, U.S.A.; Jane Hughes, Rockefeller Foundation, U.S.A.; Nicolas Jara, Ministry of Health, Ecuador; Ilona Kickbusch, WHO Regional Office for Europe, Denmark; Christina Larsson, Swedish International Development Authority, Sweden; Caryn Levitt, Family Care International, U.S.A.; Florence Manguyu, Medical Women's International Association, Kenya; Elizabeth Morris-Hughes, World Bank, U.S.A.; Alice Morton, World Bank, U.S.A.; Carol Mulholland, WHO, Switzerland; David Nabarro, Overseas Development Administration, U.K.; Zilda Arne Newmann, Ministry of Health, Brazil; Augustino Paganini, UNICEF, U.S.A.; Aagje Papineau Salm, Ministry of Foreign Affairs, The Netherlands;

Carmencita Reodica, Department of Health, Philippines; Yolanda Richardson, Carnegie Corporation, U.S.A.; Khama Rogo, University of Nairobi, Kenya; Peter Schubarth, Swiss Development Corporation, Switzerland; Jill Sheffield, Family Care International, U.S.A.; Prahash Shetty, London School of Hygiene and Tropical Medicine, U.K.; Moncef Sidhom, Ministry of Public Health, Tunisia; James Socknat, World Bank, U.S.A.; Jotna Sokhey, Ministry of Health and Family Welfare, India; Trudy Stevens, Centre for Midwifery Practice, U.K.; Kajsa Sundström, Swedish International Development Authority, Sweden; Anne Tinker, World Bank, U.S.A.; Nahid Toubia, Population Council, U.S.A.; and Felicity Zawaira, Ministry of Health, Zimbabwe.

# Annex B. Life Cycle of Women's Health

This annex discusses problems of nutrition and health that—because of differential exposure, reduced access to treatment, and culturally-imposed disadvantages—are disproportionately harmful to women at specific stages of the life cycle.

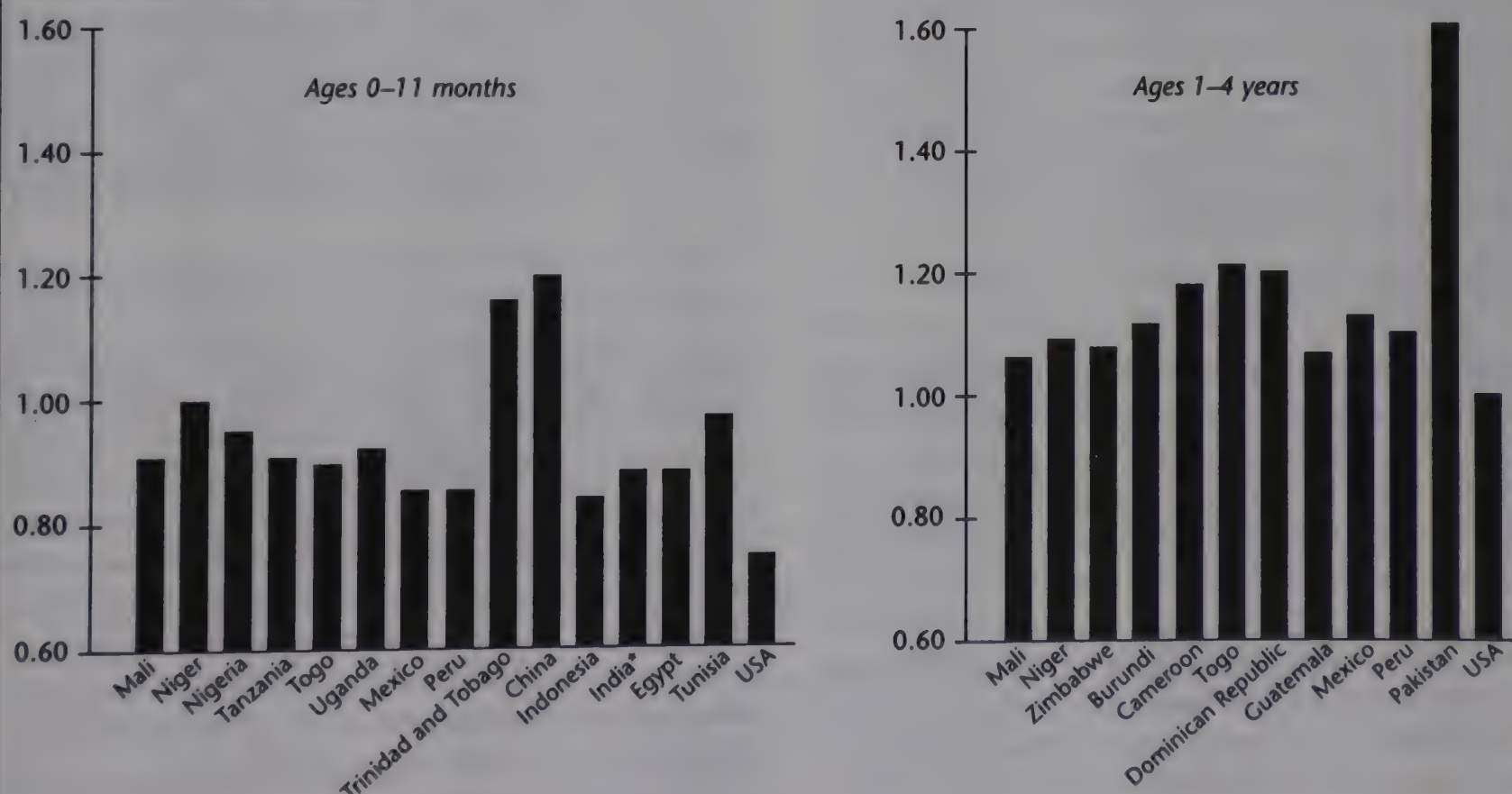
## Infancy and Childhood

Given equal nutrition, health conditions, and care, girls are more likely than boys to survive childhood. Although boys are generally more vulnerable to childhood diseases, unequal care can negate girls' biological advantage. In seventeen out of twenty-nine developing countries with recent national sur-

veys, girls aged zero to four have higher mortality rates than boys. In the industrialized countries of Norway, Switzerland, and the United States, mortality rates for boys are considerably higher (see Figure B.1).

In countries where girls are deemed of little economic value, they receive little or no education and are often required to perform strenuous tasks (including carrying firewood and water and caring for younger siblings and farm animals). One would expect that the combination of a heavy workload and low status contributes to increased morbidity among girls as compared with boys. However, while the Demographic and Health Surveys (DHS) reveal

**Figure B.1: Ratio of female to male mortality by country**  
ratio of female to male mortality



\*Comparative data for India for the age group 1 to 4 years is not available.

Note: Ten percent sample reported in 1990 census; adjusted for under-reporting.

Sources: Banister 1992 for China; Demographic and Health Survey (DHS) for Bolivia-1989, Botswana-1988, Burundi-1987, Cameroon-1991, Colombia-1990, Dominican Republic-1991, Ecuador-1987, Egypt-1992, Ghana-1988, Guatemala-1987, Indonesia-1991, Kenya-1989, Liberia-1986, Mali-1987, Mexico-1987, Morocco-1992, Niger-1992, Nigeria-1990, Pakistan-1990-1991, Peru-1992, Senegal-1986, Sri Lanka-1987, Sudan-1990, Togo-1988, Tunisia-1988, Uganda 1988-89, Zimbabwe-1988-89; Keyfitz and Flieger 1990 for the United States.

that in most of the developing countries studied, girls have higher mortality risks than boys, there is no clear evidence of female disadvantage in morbidity and treatment. Analysis of the data (Hill and Brown 1993) show little gender difference in nutritional status or in treatment for diarrheal diseases and coughing—the only three indicators for which comparable national data are available. Unfortunately, most of the South Asian countries and China are excluded from the analysis. Still, differences are found in some countries. In Colombia, for example, a recent national survey found that 12 to 13 percent more boys than girls were taken to the health center for treatment of fever and acute respiratory infection (Profamilia and IRD 1991). Local surveys in South Asia, and also in other regions, have demonstrated substantial differences in the treatment of boys and girls (Ravindran 1986).

Girls in some cultures may also be subjected to violence and physical abuse (including genital mutilation, burns, beatings, and fatal injuries reported as “suicides”). Some girls are forced into early marriage or prostitution, which curtails their education and can expose them to various reproductive health risks. Even when girls are not physically maltreated, they may suffer degradation, humiliation, and feelings of inferiority and worthlessness. Malnutrition, inadequate health care, and mental and physical abuse in childhood can have lifelong consequences—not the least of which are the perpetuation of unhealthy behaviors, including poor nutrition and substance abuse.

#### *Discriminatory child care*

Gender differences in feeding begin in infancy, with boys in some countries being breastfed more frequently and longer than girls. Son preference may also play a role in birth spacing: after giving birth to a girl, mothers wishing to try for a boy may become pregnant sooner and thereby curtail breastfeeding sooner than if they had a boy. In some areas of the world, girls are more likely than boys to receive substantially less food and less nutritious food relative to their needs, and hence are at higher risk of malnutrition and growth problems (Ravindran 1986).

Malnutrition increases susceptibility to infections and disease, stunts growth, and impedes physiological maturity. Stunting of children before the age of three, furthermore, is largely irreversible (UN/ACC/SCN 1992a). For women, stunting—particularly when combined with early pregnancy and poor weight gain in pregnancy—can lead to

obstructed labor, and low birthweight and poor infant viability (Ravindran 1986).

#### *Sex selection*

In some countries, the preference for sons is so strong that female fetuses are aborted and newborn females neglected and permitted to die. In China, India, and the Republic of Korea, selective abortion of female fetuses detected by ultrasound and amniocentesis (and possibly also female infanticide) are sufficiently widespread that they may be skewing the males to females ratio (Coale 1991; Heise et al. 1994; Zeng Yi et al. 1993). Since the 1960s, the sex ratio at birth of 106 males for every 100 females in China has shifted to 110 males per 100 females born in 1991 (Zeng Yi et al. 1993).

#### *Genital mutilation*

An estimated 85 to 114 million girls and women worldwide have been subjected to genital mutilation, also known as female circumcision. In its most severe form, the clitoris and labia minora are removed and the labia majora are sewn together, leaving a small hole for urine and menstrual blood flow. The more common, lesser forms entail removal of the clitoris and sometimes the labia minora. While mostly done between the ages of four and eight, genital mutilation is sometimes done as early as infancy or as late as just prior to delivery of the first child.

Each year genital mutilation is performed on an estimated two million young girls in Africa and parts of the Middle East, with the stated aim of curtailing sexuality to ensure chastity before marriage and faithfulness thereafter. Women often insist that their daughters undergo the procedure to become socially acceptable (“clean”) and eligible for marriage. Usually performed without anesthesia and with unclean instruments, genital mutilation can cause hemorrhage, tetanus, infection, injury to organs, severe pain, mental trauma, and death. Long-term consequences include pain during intercourse, difficulties during childbirth, infertility, and recurrent urinary tract infections.

#### *Sexual abuse*

Primarily because of the lack of data, sexual abuse among very young girls has received little attention from health professionals to date. Yet the few studies available suggest that the problem is widespread

among diverse cultures. For example, studies in Malaysia and in Lima, Peru, found that 18 percent of the victims of sexual assault were age nine or younger; more than 20 percent of the victims in Mexico City and the United States were age ten or younger (Consumers Association of Penang 1988; Portugal 1988; COVAC 1990; Kilpatrick et al. 1992). A study in Nigeria reported that 16 percent of the female patients seeking treatment for STDs were children under the age of five, and another 6 percent were aged six to fifteen (Kisekka and Otesanya 1988). Studies in Lima, Peru, and in Costa Rica found that more than 90 percent of the girls aged twelve to sixteen who gave birth had been raped by their father or a close relative (Movimiento Manuela Ramos [n.d]; Treguear and Carro 1991). Early sexual abuse, as well as sequelae such as pregnancy and STDs, have lifelong psychological and physical consequences. In most developing countries, however, few services are in place to provide counseling and assistance to victims of sexual abuse.

## Adolescence

Women between the ages of ten and nineteen are generally healthy. Sexual activity—which can lead to unwanted pregnancy, early childbearing, unsafe abortion, and exposure to STDs (including AIDS)—poses the greatest health risk for adolescent women. Because they are neither children nor adults, adolescent girls frequently fall between the cracks of the health care and social service systems.

### Early childbearing

The timing of initiation into motherhood varies considerably among developing countries, with 10

to 50 percent of young women having their first birth during their teenage years. Fertility rates are declining worldwide, but they are falling less rapidly among adolescent women. Although adolescent fertility rates vary greatly among (see Table B.2) and within countries, early childbearing is generally associated with rural residence, little education, low income, and early age of sexual initiation (PRB 1992; Ross et al. 1993; UN 1989; Yinger et al. 1992).

Early marriage generally leads to early pregnancy. Births to unmarried adolescents are increasing, however, due to earlier menarche, later marriage, and—with urbanization and more social interaction outside the household—increasing opportunities for sexual activity outside of marriage. Media, peer pressure, and other factors have changed social mores. In some areas young women exchange sexual favors to meet their material needs.

Despite their high risk, most unmarried adolescents lack the requisite knowledge and services to prevent STDs or pregnancy. Studies in Guatemala and Kenya found that fewer than one in ten unmarried youths could correctly identify the fertile period (Ajayi et al. 1991; CDC 1991). In most developing countries, a majority of young women have heard of at least one modern contraceptive method but generally do not have adequate knowledge about correct usage. National surveys in Botswana, Ghana, Kenya, Jamaica and Liberia found that—while at least one in four women aged fifteen to nineteen was single and sexually experienced—few were using contraception. Among those who were using contraception, large proportions were relying on ineffective traditional methods such as rhythm and withdrawal (Population Reference Bureau 1992; Yinger et al. 1992). Even with knowledge of contraceptives, adolescents have difficulty obtaining

**Table B.1: Major threats to female health**

<i>Reproductive health problems</i>		<i>Other*</i>
Major causes of maternal death	Maternal morbidities	<ul style="list-style-type: none"> <li>• Nutritional deficiencies</li> <li>• Chronic diseases (cardio- and cerebrovascular, diabetes, etc.)</li> <li>• Urinary tract infection</li> <li>• Gender violence</li> <li>• Certain occupational and environmental health problems</li> <li>• Mental depression</li> </ul>
<ul style="list-style-type: none"> <li>• hemorrhage</li> <li>• obstructed labor</li> <li>• infection</li> <li>• hypertensive disorders</li> <li>• unsafe abortion</li> </ul>	<ul style="list-style-type: none"> <li>• uterine prolapse</li> <li>• obstetric fistulae</li> </ul>	
Pregnancy-exacerbated conditions	Other reproductive morbidities	
<ul style="list-style-type: none"> <li>• anemia</li> <li>• malaria</li> <li>• protein-energy malnutrition</li> <li>• sickle cell disease</li> <li>• diabetes</li> <li>• hepatitis</li> <li>• tuberculosis</li> <li>• heart disease</li> </ul>	<ul style="list-style-type: none"> <li>• female genital mutilation</li> <li>• reproductive tract infections (including STDs and AIDS)</li> <li>• menstrual disorders</li> <li>• cancers (cervix/breast)</li> <li>• menopausal disorders</li> <li>• infertility</li> <li>• osteoporosis</li> </ul>	

\*These conditions affect both sexes but have a disproportionate effect on women.

them, fear side effects, or avoid use because of partner opposition or religious proscription. Unmarried women often do not plan for sex, and newly married women are encouraged to bear children early.

Regardless of marital status, teenage childbearing—especially under age sixteen—involves serious health risks for the young woman and her child (including pregnancy-induced hypertension, anemia, malnutrition, cephalopelvic disproportion,

vesicovaginal and rectovaginal fistulae, difficult delivery, retardation of fetal growth, premature birth, low birth weight, and perinatal mortality (Koetsawang 1990; Senanayake 1990; UN 1989).

In a Nigerian study, for example, 17 percent of fourteen year-olds developed hypertensive disease, as compared with 3 percent of women aged twenty to thirty-four (WHO 1989b). In addition, younger adolescent women may have a narrow birth canal at

**Table B.2: Pregnancy risk, contraceptive use, and births among women aged 15 to 19**

Region/Country and Date of Survey	Pregnancy Risk (percentage of women aged 15-19)		Contraceptive Use (percent of sexually experienced women aged 15-19)		Teenage Mothers
	Currently married	Single and sexually experienced	Currently married	Never married	Percent of women aged 20 to 24 who had a birth by age 20
Africa					
Botswana, 1988	6	60	17	23	55
Burundi, 1987	6	2	4	—	27
Ghana, 1988	21	26	5	18	51
Kenya, 1989	18	26	13	14	58
Liberia, 1986	32	46	2	10	64
Mali, 1987	72	1	8	—	67
Namibia, 1992	7	35	21	—	63
Nigeria, 1990	34	20	1	44	54
Senegal, 1986	42	—	9	—	59
Togo, 1988	27	37	17	45	56
Uganda, 1988-89	37	22	2	8	68
Zimbabwe, 1988-89	18	12	30	22	49
Latin America and the Caribbean					
Bolivia, 1989	13	13	16	—	37
Brazil, 1986	13	6	48	29	31
Colombia, 1986	12	7	29	—	31
Costa Rica, 1990	18	11	51	—	—
Dominican Republic, 1992	17	6	25	—	33
Ecuador, 1989	16	—	18	—	—
El Salvador, 1985	24	—	22	—	—
Guatemala, 1987	24	5	5	—	50
Haiti, 1989	15	8	5	—	—
Honduras, 1987	22	—	20	—	—
Jamaica, 1989	20	35	48	—	—
Mexico, 1987	18	3	30	—	35
Paraguay, 1987	17	12	22	—	37
Peru, 1986	12	6	23	—	27
Trinidad & Tobago, 1987	20	2	43	—	30
Asia					
Bangladesh, 1989	48	—	15	—	—
China, 1982	4	—	—	—	—
India, 1988	41	—	—	—	—
Indonesia, 1991	18	—	29	—	36
Korea, Republic of, 1985	1	—	—	—	—
Nepal, 1986	38	—	1	—	—
Pakistan, 1990-91	18	—	3	—	30
Philippines, 1988	8	—	—	—	—
Thailand, 1987	16	—	43	—	24
Vietnam, 1988	4	—	5	—	—
Middle East and North Africa					
Egypt, 1992	15	—	13	—	31
Jordan, 1990-91	10	—	8	—	21
Morocco, 1992	11	—	22	—	19
Tunisia, 1988	4	—	11	—	13

Sources: Survey data from Demographic and Health Surveys and Centers for Disease Control; PRB 1992; Ross et al. 1993; Yinger et al. 1992.

the time of first birth because pelvic bone growth is not completed until two or three years after growth in height has stopped (Harrison et al. 1985). A narrow birth canal is a leading cause of difficult deliveries that prolong labor and increase the risk of obstetric fistulae (a tearing of the walls between the vagina and bladder or rectum). Women with unrepaired fistulae constantly drip urine or feces, making them social outcasts and likely candidates for divorce or abandonment. In Nigeria, 33 percent of fistulae cases involve women under age sixteen, and in Niger, 80 percent are fifteen to nineteen years old (WHO 1989b).

Having a very early first birth also increases a woman's risk of dying from pregnancy-related causes. According to the WHO, women aged fifteen to nineteen face a 20 to 200 percent greater risk of pregnancy-related death than older women, and the younger the adolescent, the higher the risk. In Jamaica and Nigeria, for example, women under fifteen are four to eight times more likely to die during pregnancy and childbirth than those aged fifteen to nineteen (WHO 1989b).

Infants born to adolescent mothers are also more likely to die or have more severe health problems than those born to older women. In Burundi, Ghana, Kenya, Liberia, Mali, Nigeria, Senegal, and Zimbabwe, infants born to mothers aged fifteen to nineteen face a 20 to 60 percent higher risk of dying before their first birthday than those born to women aged twenty to twenty-nine (PRB 1992). Similarly, in Bangladesh, Korea, Malaysia, Pakistan, and Thailand, the infant-mortality risk for babies born to teenage mothers is at least 50 percent greater than that for babies born to mothers in their twenties (UN 1989).

### *Abortion*

Faced with an unintended pregnancy which may lead to loss of schooling, social ostracism, and other adverse consequences, many pregnant adolescents seek abortions. Where abortion is legal, roughly one-fourth of abortions are to teenagers (Henshaw and Van Vort 1989; Singh and Wulf 1990). Where abortion is illegal or restricted, teenagers often resort to clandestine abortion and account for between one million and 4.4 million abortions annually (CPO 1992).

Because of their tendency to seek clandestine abortions, to delay obtaining the procedure, and to avoid seeking medical attention for subsequent problems, adolescents' rate of abortion complica-

tions (including hemorrhage, septicemia, anemia, cervical and vaginal lacerations, pelvic abscess, perforation of the uterus or bowel, tetanus, and secondary infertility) is higher than that of older women (CPO 1992). Studies of hospital records in Congo, Kenya, Liberia, Mali, Nigeria, and Zaire found that between 38 and 68 percent of women seeking care for complications of abortion were under twenty years of age. The proportion is more than 25 percent in Malaysia, and more than 10 percent in Brazil, Chile, Guatemala, Peru, and Thailand. A study in the United Kingdom showed that the risks associated with abortion were about three times higher in girls under sixteen than in older adolescents (WHO 1992a).

### *Sexually transmitted diseases and AIDS*

Sexually transmitted diseases (STDs) are spreading rapidly among young people. In Uganda, for example, youths aged fifteen to nineteen have the highest incidence of STDs in the population. Research suggests that adolescent girls may be biologically more vulnerable to STD and HIV infection than older women with mature reproductive organs. Because of the tendency of older men to seek younger partners, girls are more likely than boys to have STDs.

Age disparity also implies a greater power differential between sexual partners, which makes it difficult for younger women to insist on safe sexual practices. Payment of the bride price (common in marriages arranged in African and Middle Eastern countries) encourages the marriage of young girls to older men who can afford to pay it, but among whom the incidence of STDs is greater than in younger men. Finally, poverty forces some young girls into commercial sex work, contributing to the rate of STDs and AIDS among them, and through them, among the wives and partners of their clients (Havanon et al. 1993). In Thailand, where an estimated 800,000 prostitutes are under age twenty, one quarter are under age fourteen, and roughly three in ten are HIV-infected (IPPF 1992).

HIV infection is also more common in young people than in older adults, and this is particularly true for women. According to WHO at least half of those infected with HIV worldwide are under the age of twenty-five (WHO 1989b), and in many parts of Africa, HIV infection is increasing more rapidly among females than among males. A study in Zaire found HIV infection to be four times more prevalent in women than in men fifteen to thirty years old

(Panos Institute 1989). Where older men seek out adolescent girls with little or no sexual experience to avoid HIV infection, some spread the virus to their young partners. Studies in Ethiopia and Zimbabwe reveal that, while the ratio of AIDS infection is equal among men and women twenty to twenty-nine years old, adolescent girls aged fifteen to nineteen are three to five times more likely than boys to be infected (Zewdie 1993).

#### *Undernutrition and micronutrient deficiency*

Poverty and cultural factors (such as inequitable intrahousehold food distribution and food taboos) tend to affect the nutrition of adolescent girls adversely. Puberty triggers a growth rate greater than any beyond the first year of life. Although growth begins slowing for girls by the age of approximately fourteen, linear growth, particularly of the long bones, is not complete until the age of eighteen, and peak bone mass is not achieved until the age of twenty-five (FNB/NAS/NRC 1989). Thus growth-related needs for many nutrients continue well into the early twenties and are likely to overlap with the nutrient requirements of first pregnancy and, possibly, several additional pregnancies.

Girls also need more iron following menarche, particularly in developing countries where infectious diseases such as malaria, schistosomiasis, and hookworm contribute further to anemia (Brabin and Brabin 1992). Anemia causes fatigue, poor appetite, poor learning capacity, and gastrointestinal and neurological problems. While the prevalence of iodine deficiency goes down in males by late adolescence or the early twenties, it remains high in females—setting the stage for higher rates of iodine deficiency among women during their reproductive years and increasing the risk of mental retardation among their offspring.

Skeletal growth is also delayed by malnutrition. Although some catch-up on earlier growth retardation appears possible, it is not likely to occur without increased income or subsidized food supplementation. Since a smaller pelvis can prolong labor and obstruct delivery, incomplete skeletal growth or stunting also poses serious risks during childbirth.

#### *Substance abuse*

During adolescence, individuals exercise increasing independence from their families, and are more

likely to engage in experimentation and risk-taking. In middle-income countries today, adolescents are beginning to smoke, drink alcohol, and take drugs in increasing numbers and at earlier ages. This early initiation sets a pattern for lifelong use and increases morbidity and mortality in later years. Smoking increases women's risk of lung and cervical cancer and osteoporosis. Women over age thirty who smoke heavily and take oral contraceptives have a higher risk of cardiovascular disease. Pregnant women who smoke have a higher risk of infertility, stillbirth, premature labor, and low-birth-weight babies. Although it is still more prevalent among males than females, substance abuse is increasing among both sexes. Furthermore male substance abuse is associated with violent behavior toward women and unsafe sexual practices. In pregnant women, substance abuse increases the chance of congenital malformations and low birth weight (Smyke 1991).

#### **Reproductive Years**

In developing countries, women between the ages of fifteen and forty-four have higher rates of disability than men, primarily because of their reproductive role. Maternal morbidity and mortality account for 18 percent of the disability-adjusted life years (DALYs) lost by women of reproductive age, while sexually transmitted diseases and HIV account for an additional 16 percent. Tuberculosis, depressive disorders, self-inflicted injuries (including suicide), respiratory infections, and anemia also cause considerable premature death and disability (World Bank 1993c). These conditions are largely preventable and could be mitigated through appropriate health care and the adoption of cultural practices favorable to women's health.

#### *Unplanned pregnancy and abortion*

In developing countries, one in five births is unwanted (Westoff 1991). In countries outside Africa for which survey data are available, at least half of all married women do not want any more children (Robey et al. 1992).

Despite their expressed desires, many women remain at risk of an unplanned pregnancy. Surveys find that between 20 and 30 percent of the married women of reproductive age in most developing countries—an estimated 120 million women—who wish to avoid becoming pregnant are not using contraception (Westoff and Ochoa 1991; Robey et al.

1992). This number would increase substantially if unmarried women, women who need a better or more suitable contraceptive method, and women who use abortion services were included.

Roughly one-fourth—an estimated forty to sixty million—of all pregnancies worldwide end in abortion (Tietze and Henshaw 1986). More than half of these are clandestine and are performed under unsafe conditions (Population Crisis Committee 1987).

Unsafe abortion is one of the most important causes of pregnancy-related morbidity and mortality in many developing countries, accounting for 125,000 to 200,000 female deaths annually. In Sub-Saharan Africa, abortion accounts for one in three pregnancy-related deaths, and one in four in South Asia and Latin America (Dixon-Mueller 1990; La Guardia et al. 1990; Rosenfield 1989; WHO 1992c). In most of the Central Asian Republics, where abortion services are of poor quality and contraceptives are virtually unavailable, it is the second highest cause of pregnancy-related deaths. Abortion-related mortality is highest in countries where abortion is legally restricted, access to family planning and safe abortion services is limited, and overall maternal mortality is high.

About 40 percent of the world's population live in countries with no restrictions on abortion, 23 percent where abortion is permitted for social and medical reasons, 12 percent where abortion is permitted when the woman's life and health are at stake or there are injuries to the fetus, and 25 percent where abortion is permitted only to save the life of the woman or not permitted at all (Henshaw 1990). The impact of unsafe abortion on women's health is illustrated by Romania's experience. After Romania outlawed both abortion and contraception in 1966, deaths from abortions rose dramatically. When these restrictions were dropped in 1990, maternal mortality fell to 40 percent of the previous year's level (see Figure B.2).

Unsafe abortion can harm a woman's physical and mental health, cause infertility, and have negative social consequences. The cost of treating complications from unsafe abortions is considerable—many times greater than that of offering safe abortion services. Treating abortion complications can consume as much as half of a hospital's budget (McLaurin et al. 1991; WHO 1990b; WHO 1990c).

RU-486, a drug that induces abortion within the first sixty-three days of pregnancy, shows promise as a nonsurgical method of early abortion. Because of

its high cost and need for medical supervision and follow-up, however, RU-486 is not yet appropriate for use in developing countries.

#### *Pregnancy-related complications*

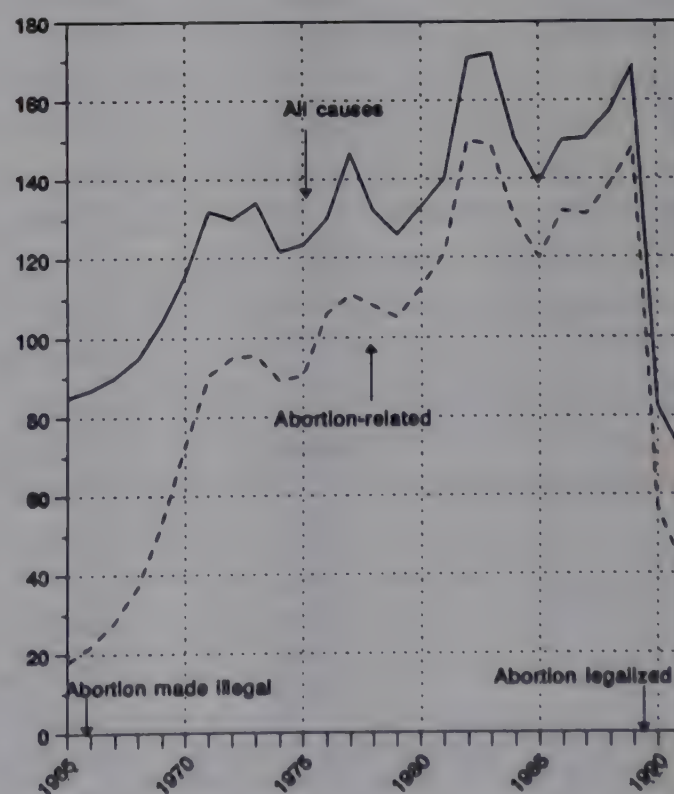
More than 150 million women become pregnant in developing countries each year. An estimated 500,000 of these women, however, die from pregnancy-related causes, and more than fifty million experience acute pregnancy-related complications. An important contributing factor to high maternal mortality and morbidity is the inadequate coverage and low quality of care provided to pregnant women in developing countries. Only about half the pregnant women in these countries receive even minimal prenatal and delivery care (Table B.3).

While maternal mortality ratios have fallen in parts of Latin America and in Southeast and West Asia, they remain high in Africa and South Asia. Even though the risk of dying as a result of pregnancy or childbirth has declined globally, the number of pregnancy-related deaths has continued to rise as the number of women in their prime child-bearing years also rises.

The lifetime risk of dying from pregnancy-related causes varies widely: one in every twenty-two women in Africa dies of complications of pregnancy,

**Figure B.2: Maternal mortality in Romania, 1965–91**

*maternal deaths per 100,000 live births*



Source: Adapted from Stephenson and others 1992 which used data from The Ministry of Health of Romania.

delivery, or abortion, compared with only one in every 10,000 in Northern Europe (Rochat 1987). The death toll is greatest in Sub-Saharan Africa and South Asia, where maternal mortality ratios (pregnancy-related deaths per 100,000 live births) are as much as 200 times higher than those in industrialized countries. This is the widest disparity in human development indicators between developed and developing countries yet reported.

In developing countries, more than one-fourth of all deaths to women of reproductive age are pregnancy-related, and four in five result directly from obstetrical causes: hemorrhage contributes 25 percent; sepsis about 15 percent; unsafe abortion at least 13 percent; hypertensive disorders (eclampsia) about 12 percent; and obstructed labor about 8 percent (see Figure B.3). Additional pregnancy-related deaths result from conditions aggravated by pregnancy (such as malaria, viral hepatitis, diabetes, anemia, and rheumatic heart disease (WHO 1991a).

Long after delivery, many women suffer pregnancy-related disabilities (including utero-vaginal or bladder prolapse, cervical lacerations, obstetric fistulae, anemia, and infertility). In Colombia,

Pakistan, the Philippines, and Syria, between 9 and 25 percent of women under age forty-five suffer uterine prolapse (Omran and Standley 1976; Omran and Standley 1981). The condition is associated with hard physical labor, poor maternity care, and early and frequent childbearing. It causes considerable discomfort, interferes with bodily functions, and can result in a variety of complications. A recent study in rural Egypt found that more than half of all women of reproductive age suffered from uterine prolapse, although many afflicted women did not realize that they had the condition (Zurayk 1991).

Some illnesses (such as malaria, tuberculosis and viral hepatitis) can have more serious effects during pregnancy, because of the woman's weakened immune system and other physiological changes. Anemia, which affects an estimated 60 to 70 percent of pregnant women in developing countries (Sloan and Jordan 1992), impedes the woman's ability to resist infection and survive hemorrhage and makes women more vulnerable to complications during childbirth.

In some settings, the health care system may also contribute to the mother's poor health. In some

**Table B.3: Global and regional estimates of prenatal care, institutional deliveries and deliveries with trained attendant**

Country	Prenatal care*		Institutional delivery		Trained attendant at delivery**	
	(000s)	%	(000s)	%	(000s)	%
World	90,691	64	62,453	44	86,018	60
Developed***	16,818	98	16,313	95	17,043	99
Developing	73,873	59	46,140	37	68,975	55
Africa	16,711	59	9,742	34	11,929	42
Eastern	6,538	68	2,823	30	3,346	35
Middle	1,393	43	1,400	43	1,425	44
Northern	2,450	49	1,557	31	2,643	53
Southern	1,210	89	1,149	85	1,160	86
Western	5,121	55	2,813	30	3,354	36
Asia***	48,035	57	28,106	33	47,471	56
Eastern***	22,407	87	12,197	48	24,352	95
South-eastern	8,828	70	4,992	39	7,336	58
Southern	14,269	35	8,484	21	12,644	31
Western	2,531	54	2,433	52	3,139	67
Latin America	8,985	72	8,192	66	9,474	76
Caribbean	747	89	613	73	754	90
Central	2,492	71	2,018	57	2,600	74
South	5,746	71	5,561	69	6,120	76
Northern America	3,774	95	3,774	95	3,956	99
Europe	6,305	99	6,048	95	6,334	99
Oceania***	142	70	100	49	101	50
Former USSR****	5,065	100	4,812	95	5,065	100

Estimates, using 1990 UN projections for numbers of live births, were calculated for 1993 based on studies for the period 1985-1993.

\*Defined as one prenatal visit anytime during pregnancy.

\*\*Defined as a birth attended by trained medical personnel, including traditional birth attendants who have received some training in modern medical practice.

\*\*\*Japan, Australia and New Zealand have been excluded from the regional estimates, but are included in the total for developed countries. Figures may not add to totals due to rounding.

\*\*\*\*Data collected prior to recent political changes.

Source: WHO 1993a.

Latin American countries, for example, unnecessary cesarean sections increase the risk of infection and blood loss during delivery. Many hospitals also separate mothers from their newborn infants, thereby discouraging breastfeeding.

The death of a mother has profound consequences for her children: fewer than 10 percent of the infants who survive the death of their mother live beyond their first birthday (Chen et al. 1974; Koenig et al. 1988; Strong 1992). Children under age five are up to 50 percent more likely to die if their mother dies, and the mortality risk remains higher than that faced by children under age ten with living mothers (see Figure 1.2 in Chapter 1).

Even when the mother survives, pregnancy-related complications can cause death and disability to her children. Each year an estimated seven million infants are born dead or die within a week of birth because of maternal complications, poor management of labor and delivery, and the woman's general health status before and during pregnancy (WHO 1989a). Furthermore, millions of children who survive a difficult delivery suffer later from impaired physical and mental development. Each year, more than two million infants die or are brain-damaged due to oxygen deficit during delivery (CAMHADD 1990).

In developing countries, an estimated twenty-four million low-birth-weight babies are born every year. These babies are five to thirty times more likely to die during their first week of life than babies of normal weight (WHO and UNICEF 1992). Key causes of underweight newborns include the mother's poor nutritional status (short stature, low pre-pregnancy weight, inadequate weight gain dur-

ing pregnancy, and anemia), hypertension, malaria, and other infections during pregnancy.

### Malnutrition

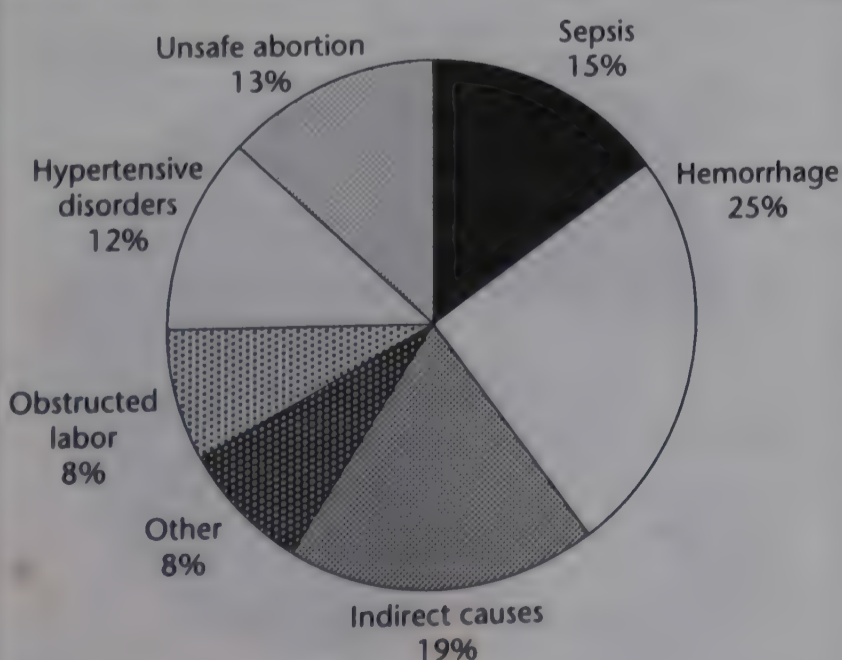
An estimated 450 million adult women in developing countries are stunted as a result of childhood protein-energy malnutrition, and iron-deficiency anemia affects an equivalent number (World Bank 1993c). About 250 million women suffer the effects of iodine deficiency, and although the exact numbers are unknown, millions are probably blind due to vitamin A deficiency (Leslie 1991; Tinker 1993). The highest levels of malnutrition among women are found in South Asia and Sub-Saharan Africa (UN/ACC/SCN 1992a).

Some 40 percent of women aged fifteen to forty-nine in developing countries suffer from anemia (Figure B.4), compared to 26 percent of men aged fifteen to fifty-nine (WHO 1992c). Anemia in women is usually caused by low iron intake combined with impaired absorption and depletion of iron stores due to menstruation, pregnancy, childbirth, malaria, hookworm, and other parasitic infections. Anemia causes extreme fatigue, seriously impedes the individual's capacity to work and learn, and reduces tolerance for hemorrhage during childbirth and abortion.

Iodine deficiency, which is more prevalent among women than men, can lead to goiter, and is associated with lethargy in women and severe mental retardation in infants. Iodine-deficient mothers have higher rates of fetal wastage, stillbirths, and low-birth-weight babies. Vitamin A deficiency, which is worsened by pregnancy, causes night blindness and inhibits the body's immune response to infection. Since Vitamin A also affects production of the body's mucosa, its deficiency thus increases risk for some types of infection, including reproductive tract infections.

Causes of malnutrition include inadequate food supply, inequitable distribution of food within the household, improper food storage and preparation, food taboos, lack of knowledge regarding nutritious foods, and problems associated with food's biological use and absorption. Females are more likely than males to be malnourished because of differential food allocation and a failure to recognize women's special nutritional needs. Women of reproductive age, in particular, need adequate food to meet the high energy demands of pregnancy and lactation, in addition to hard physical labor such as farming and carrying water and fuel.

**Figure B.3: Medical causes of maternal deaths in developing countries**



Source: WHO forthcoming.

Despite breastfeeding's nutritional demands on the mother, health experts stress its many benefits for both mother and child. For the mother, breastfeeding-on-demand (including night feeds) delays the return of menses and thus prevents pregnancy for up to six months. Breastfeeding may also reduce the risk of breast cancer. For the child, breastfeeding offers optimal nutrition and protection from various diseases. Experts recommend exclusive breastfeeding (which consists of feeding the child on demand, including night feeds) and providing the child with breastmilk only (including colostrum—the first milk—but excluding water and prelacteal feeds) from birth until the age of six months (PRB 1990).

Social and cultural factors have a strong impact on dietary practices. Food taboos sometimes restrict women from consuming nutritious, high-energy foods during pregnancy and lactation when they need them most. Women's lack of control over family income hampers their ability to obtain nutritious foods for themselves and their children, and pregnant women sometimes eat less intentionally for fear of having large babies and difficult deliveries.

Women who are stunted from malnutrition are at higher risk of obstructed labor, a life-threatening condition that can also lead to fistulae in the mother and brain damage in the infant. Poor maternal nutrition is also a leading cause of low-birth-weight babies (WHO and UNICEF 1992). Adequate calcium intake to build strong bones before the age of forty, furthermore, is important for the prevention of osteoporosis in women's post-reproductive years. Finally, urban middle-income women in Latin

America and other regions are increasingly suffering from obesity—a warning that chronic diseases are on the rise (UN/ACC/SCN 1992a).

#### *Reproductive tract infections and AIDS*

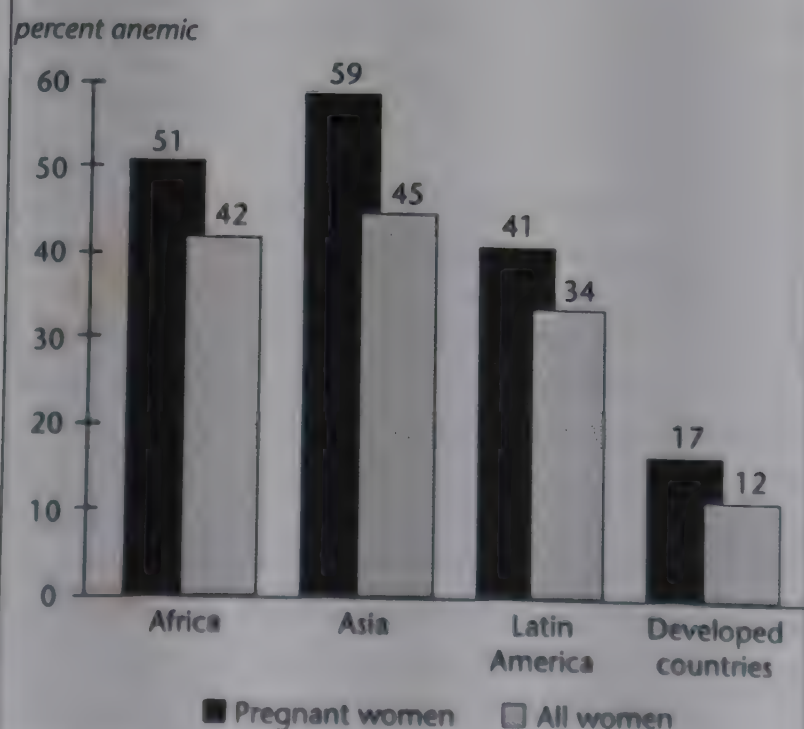
Sexually transmitted diseases and other reproductive tract infections (RTIs) have profound health and social consequences for women. RTIs account for more than half of all infections and parasitic diseases suffered by women ages fifteen to forty-four (Figure B.5). Women are more susceptible to these infections than men. Because RTIs are often asymptomatic in women, they are more likely than men to experience complications from untreated RTIs.

Worldwide, about 250 million new reproductive tract infections are sexually transmitted annually (WHO 1990d). RTIs that are not sexually transmitted include infection caused by induced abortion, improper IUD insertion, unhygienic delivery practices, childbirth, and such traditional practices as female genital mutilation.

RTIs can lead to pelvic inflammatory disease (PID), infertility, and adverse pregnancy outcomes such as miscarriage, ectopic pregnancy, stillbirth, low birth weight, prematurity, and congenital infection. PID also causes chronic pelvic pain and recurrent infection.

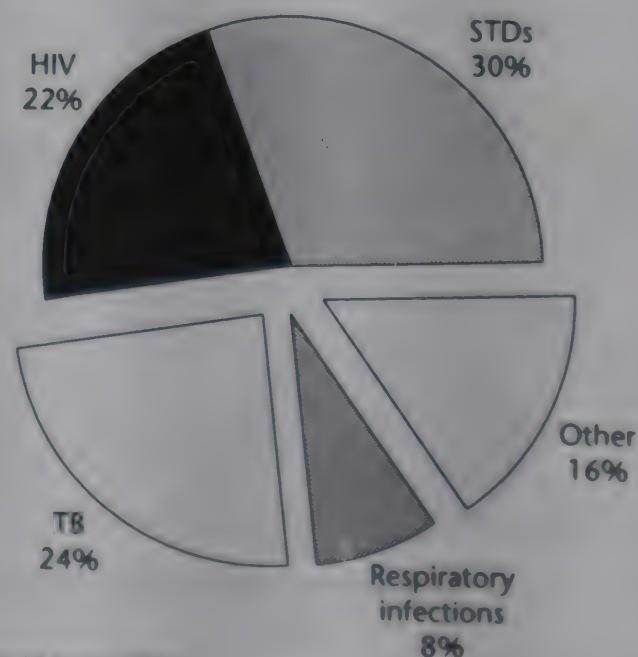
According to WHO, RTIs account for roughly 40 percent of infertility cases in Asia, Latin America, and the Eastern Mediterranean region, and 85 percent of cases in Africa (WHO 1987). Roughly 8 to 10 percent of all couples worldwide experience some form of infertility, defined as an inability to conceive in twelve months of unprotected intercourse, at

**Figure B.4: Prevalence of anemia among women aged 15–49, 1990**



Source: WHO 1992c

**Figure B.5: Infectious and parasitic diseases in women aged 15–44**



Source: World Bank 1993c.

some time during their reproductive lives (WHO 1990d). The most common cause of infertility in many developing countries is blockage in, or damage to, the fallopian tubes. Where rates of secondary infertility (failure to conceive again after a prior pregnancy) are high, complications due to poor management of delivery may be the cause. In a study of women aged fifteen to fifty in different regions of Cameroon, for example, 3 to 17 percent suffered from primary infertility, and 14 to 39 percent from secondary infertility (Sherris and Fox 1983). For women, infertility can mean divorce, abandonment, and social ostracism.

HIV/AIDS, which is primarily transmitted sexually, is spreading rapidly among women (see Figure B.6). In Sub-Saharan Africa alone, nearly four million adult women are already infected, and according to WHO nearly half of newly infected adults are women. By the year 2000, more than thirteen million women may be infected (WHO 1993c). AIDS is the leading cause of death among urban African women aged twenty to forty (World Bank 1992c), and in the past five years, the number of AIDS cases among women in Central America has increased to forty times previous levels (PAHO/WHO 1992a). In Latin America and the Caribbean, AIDS is spreading among women largely because of their partners' high-risk behavior. The same is true in South and Southeast Asia, where it is spreading rapidly among prostitutes, women whose husbands are infected by prostitutes, and drug users. A recent study in Thailand found that 19 percent of prostitutes in Bangkok brothels and 46 percent of those in Chiang Mai, as well as more than one-third of injecting drug

users, were HIV-infected (Ford and Koetsawang 1991).

Worldwide, about 60 percent of HIV infections result from heterosexual transmission. Women, moreover, are more likely than men to contract HIV infections because of:

- *Increased likelihood of infection per exposure.* Women have a larger mucosal surface exposed during sexual intercourse, and semen contains a much higher concentration of HIV than vaginal fluid. Women are also more likely than men to have asymptomatic, untreated STDs, which increase their susceptibility to HIV infection.
- *Greater exposure and at younger ages.* Women tend to have sex with older men, who are more likely to be infected. In addition, social norms that require female passivity and economic dependence on men make it difficult for women to insist on mutual fidelity or condom use (WHO 1993c). Finally, women are exposed to HIV infection when they receive blood transfusions to combat pregnancy-related anemia or hemorrhage.

Women's lower status increases their susceptibility to both STDs and HIV/AIDS. Inadequate sex education and harmful traditional practices also contribute to their higher risk. Women's lower economic status can lead to exchange of sexual favors for economic support, which also increases their risk.

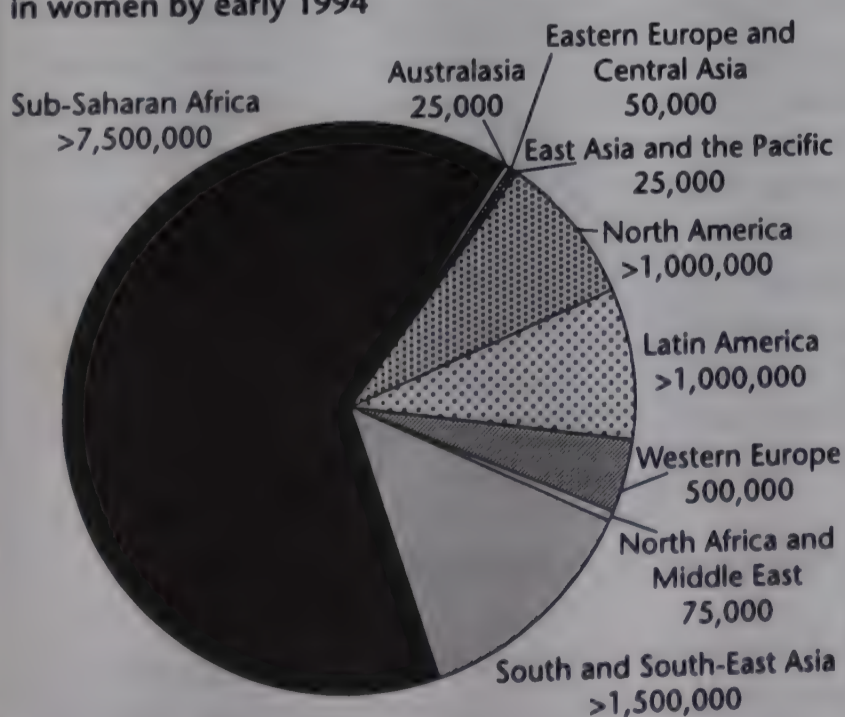
Women with HIV run a high risk of passing the virus to their newborns and usually die while their children are still growing up. Tested at age one, between 15 and 40 percent babies of HIV-infected mothers were also infected (WHO 1992b).

### Post-Reproductive Years

The health of adults over the age of fifty is often considered only of concern to industrialized societies. However, the majority of the world's 467 million women aged fifty and older live in developing countries. By the year 2020 one in five women in developing countries will be fifty or older. The projected 250 percent increase in this age group has major implications for health care. Developing countries in transition face the dual problem of both communicable and chronic disease, with implications for resource allocation, the appropriate mix of preventive and curative services, and the protection of vulnerable groups.

The vast majority of health problems among women older than fifty are chronic (ranging from

Figure B.6: Estimated cumulative HIV infections in women by early 1994



Source: WHO 1993c.

chronic back pain to cancer, cardiovascular and cerebrovascular diseases, arthritis, and diabetes). Older women also suffer from injuries, mental health problems, and, in low-income areas, infectious and parasitic disease. Loss of visual acuity and hearing, osteoporosis, malnutrition, and anemia also contribute to substantial morbidity. Yet treatment of chronic degenerative diseases in developing countries is often not available or is prohibitively expensive.

As a result of urbanization, migration and changing family structure, women are increasingly neglected in old age. The cumulative effects of a lifetime of nutritional deprivation, hazardous and heavy work, continuous childbearing, and low self-esteem leaves them both physically and mentally frail, while abandonment and widowhood often leave them destitute.

Because of their tendency to marry men older than themselves and their longer life expectancy, women are more likely than men to be widowed. With the shift away from the support of extended families, elderly women are increasingly left on their own. Loss of a partner and living alone may have important health implications (including inappropriate diet and inattention to illness) and often lead to poverty, ill health, and institutionalization.

With their increasing life expectancy, many women will survive for decades after menopause. The decline in ovarian hormone levels after the cessation of menses leads to alterations in the skeletal, cardiovascular, nervous, skin, genitourinary, and gastrointestinal systems. Some of the symptoms attributed to menopause are actually caused by other biological changes and by psychological and environmental forces in a woman's life. But whatever the cause, millions of women develop symptoms around menopause that interfere with their capacity to function at home or in the workplace (Frankenhaeuser et al. 1991).

As women live longer, diseases related to the absence of ovarian steroids begin to develop. These diseases (which include osteoporosis, coronary heart disease, and cerebrovascular disease) are chronic and require expensive therapy. It is important, therefore, both to teach younger women how to protect their future health and to provide supportive measures that enable post-menopausal women to continue their daily activities.

### *Gynecological cancers*

Among women in developing countries, cancers of the stomach, cervix, and breast are the most com-

mon; in developed countries, breast, colorectal, and lung cancers are the most prevalent (World Bank 1993c). Gynecological cancers (including breast, cervical, uterine, and ovarian) account for 27 percent of all malignancies occurring to women in developing countries. Although these cancers may begin in the reproductive years, it is most common after menopause.

In developing countries, 400,000 new cases of cervical cancer are identified each year and 183,000 women die from the disease (Figure B.7) (Sherris et al. 1993; World Bank 1993c). The highest rates of cervical cancer are found in East and Central Africa, the Caribbean, tropical South America, and parts of Asia (Meheus 1992). Women who have multiple partners or whose partner is promiscuous are at highest risk for cervical cancer, which can usually be cured if detected early. In developed countries, widespread access to screening tests using cytology (Pap smears) and to treatment has substantially reduced disability and death due to cervical cancer.

Each year, about 229,000 new breast cancer cases are detected in developing countries, and 158,000 women die from the disease (World Bank 1993c). The risk of developing breast cancer is related to age at first pregnancy, menarche, and menopause, but dietary and other factors also play a role. Because the causal factors are not well known, strategies to prevent breast cancer remain unclear. Where appropriate treatment is available, however, early detection through physical examination of the breast or mammography contribute to an improved prognosis.

Deaths attributed to lung cancer are relatively low in developing countries and occur predominantly among men. But with women smoking more, deaths from lung cancer are expected to rise. About 5 to 7 percent of women in developing countries are currently smokers. In a handful of countries (Bolivia, Brazil, Nepal, Papua New Guinea, Swaziland, and Turkey), more than half of all women smoke (WHO 1992c). Smoking has deleterious effects on reproductive health (earlier menopause, cervical cancer) and also contributes to the development of chronic obstructive pulmonary disease, bronchitis and cardiovascular diseases. Exposure to cooking fires and second-hand smoke also contributes to lung cancer in women.

### *Cardiovascular and cerebrovascular diseases*

In developing countries among women sixty-five years of age and older, cardiovascular diseases, including ischemic and hypertensive heart disease,

and cerebrovascular diseases, are the leading causes of death (World Bank 1993c). In China, where these diseases account for half of all deaths, women are more likely to die from them than men. With the increasing adoption of such risk-producing behaviors as smoking and alcohol consumption, the incidence of cardiovascular disease is likely to increase in developing countries. Obesity, too, may increase the risk of stroke among women and measures to prevent cardiovascular diseases include control of weight and hypertension through diet and regular exercise (DiPietro et al. 1994).

### Diabetes

While the prevalence of diabetes appears to be low in most developing countries, it is becoming more prevalent in urban areas of Asia, the Middle East, Latin America, and the Caribbean. The increase in the incidence of diabetes is associated with adoption of a diet high in sugar and fat, and lack of exercise. Diabetes is listed as a major factor contributing to death in thirteen of the eighteen Latin American countries and six of the ten Caribbean countries (Sennott-Miller 1989; Young 1993b). It is a major risk factor for cardiovascular disease, blindness, kidney damage, and damage of lower limbs. In many countries, it is more prevalent in females than in males (Jamison 1993). Measures to prevent diabetes include avoidance of obesity and regular exercise.

### Undernutrition

Chronic undernutrition is common among older women in Latin America, the Caribbean, South Asia,

and Africa. In both rural and urban settings, years of childbearing and inadequate nutrition cause chronic undernutrition and anemia in women, which continues into the post-reproductive period. In addition, many older women have inadequate intake of protein, vitamins, and minerals, dehydration is common, and anemia (caused by a history of marginal nutrition coupled with closely spaced pregnancies) is severe among low-income groups (UN/ACC/SCN 1992a).

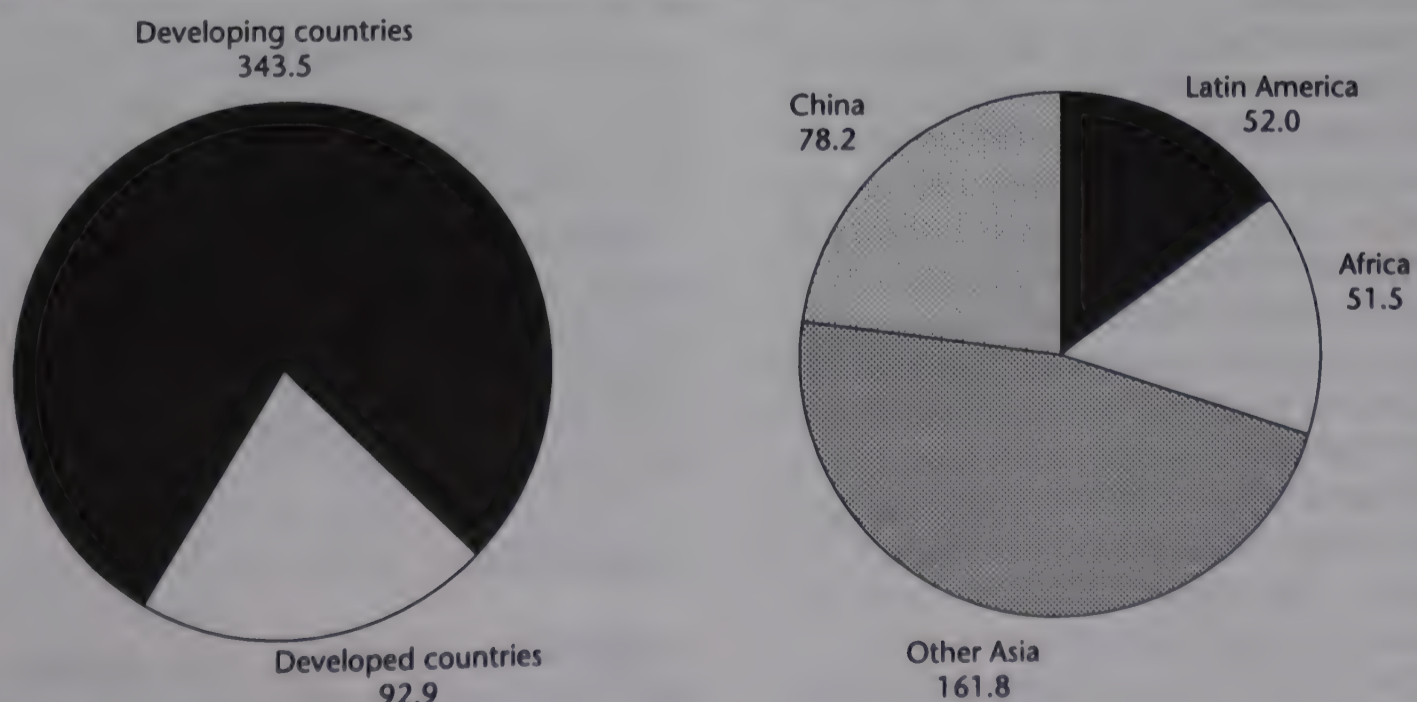
### Osteoporosis

Worldwide about 10 percent of women over age sixty have osteoporosis—bone loss that results in pain, disability, and increased risk of fractures. Because bone loss rises sharply after menopause, osteoporosis is most common in older women. It appears to be linked to decreasing hormone levels, lack of calcium in the diet during younger years, inadequate exposure to sunlight, and inactivity.

### Osteoarthritis

Post-menopausal women and those who have experienced repeated trauma to the joints are at particularly high risk of osteoarthritis. As this degenerative disease progresses, it causes pain, swelling, and stiffness of the joints. Osteoarthritis restricts a person's ability to perform routine activities and is therefore especially debilitating to elderly women living alone. Treatment consists of palliative measures such as avoiding vigorous activity, weight reduction for the overweight, and pain-relief through medicines (Harrison and Wilson 1991).

Figure B.7: Estimated number of new cervical cancer cases per year, 1985 (thousands)



Source: Parkin et al. 1993.

### **Additional Health Problems**

Gender violence, mental disorders and certain occupational and environmental hazards have a disproportionate impact on women. The health sector must identify these problems as health issues, help to quantify their prevalence and impact, promote preventive measures, and provide appropriate treatment for the medical conditions that result.

#### *Gender violence*

Violence against women (including physical, sexual, or psychological harm) is endemic in almost every society and is a significant cause of female morbidity and mortality. Violence can lead to psychological trauma and depression, injuries, STDs, suicide, and murder. Conditions resulting from rape and gender violence account for about 5 percent of the world's total disease burden (World Bank 1993c). Yet in many societies, violence against women is largely ignored or is even condoned by community leaders and policymakers. Laws that do not recognize gender-related violence as a problem sometimes serve to sanction it (Heise et al. 1994).

Of women surveyed in various countries, between 20 and 60 percent report that they have been beaten by their partners (World Bank 1993c). In developing countries, gender violence is a significant cause of injury and ill health. A study in Alexandria, Egypt, found that domestic violence accounted for 28 percent of visits to trauma units (Graitcer 1994). In Papua New Guinea, 18 percent of urban wives reported having received hospital treatment for injuries inflicted by their husbands, and 67 percent of rural wives reported that they had been beaten (Bradley 1988).

The physical aftermath of wife-beating can include death, broken bones, internal injuries, miscarriage, and cuts and bruises. Battered women who are pregnant are twice as likely to have a miscarriage and four times more likely to have a low-birth-weight baby than other women (World Bank 1993c). Psychological sequelae include fear, anxiety, fatigue, sleeping and eating disorders, and post-traumatic stress disorder. About one in three battered women suffers major depression—which leads some to alcohol and drug abuse (Heise et al. 1994). Suicides stemming from marital violence have been reported in diverse cultures, and spousal homicide is often preceded by a history of physical abuse.

In India, young brides are sometimes abused and killed if their families fail to meet demands for addi-

tional dowry payments. Dowry deaths usually take the form of setting the woman on fire and claiming she died in a kitchen accident. In urban Maharashtra and greater Bombay, one in four deaths to women aged fifteen to twenty-four are attributed to "accidental burns" (Karkal 1985).

Reliable data on the incidence of rape are difficult to obtain, as many rapes go unreported. Among women aged eighteen to twenty-one surveyed in five countries, between 8 and 18 percent reported that they had been raped (Heise et al. 1994). Studies indicate that the majority of rape victims know their assailants, and that at least one-third of rapes are perpetrated against girls aged fifteen and younger (Heise 1993). In wartime, mass rapes have been documented in many countries (Heise et al. 1994).

Rape and sexual assault can cause both physical injury and profound emotional trauma. Studies show that rape victims are more likely to attempt suicide and experience major depression and other mental disorders than non-victims (Heise et al. 1994). Traumatic consequences—including sleep and eating disturbances, feelings of anger and self-blame, nightmares, inability to concentrate, and sexual dysfunction—can endure for years. Rape victims also face the risk of unwanted pregnancy, STDs, and HIV/AIDS. In many societies, the social stigma of rape leads to beatings, ostracism, murder, and suicide.

Child and adolescent sexual abuse also has severe, long-term psychological effects, which can be manifested as physical complaints (such as chronic pelvic pain, headaches, asthma, gynecological problems, and gastrointestinal disorders). Early sexual victimization may also leave women with low self-esteem and make them vulnerable to further assaults, including rape and spousal violence. Some studies have found a link between early sexual victimization and excessive drug and alcohol use, unprotected sex with multiple partners, prostitution, and teenage pregnancy (Heise et al. 1994).

Violence against women constitutes a significant drain on health resources. Two studies in the United States found that women who had been raped or assaulted had higher health care costs and more physician visits than nonvictimized women (Feletti 1991; Koss et al. 1991).

#### *Mental disorders*

Overall, mental disorders are more prevalent among men than among women. Men are much more likely to suffer from alcohol and drug dependency

and epilepsy than women, but women have higher rates of depressive and post-traumatic stress disorders (World Bank 1993c). Studies from thirty-three countries around the world found that the prevalence of mental disorders among women ranged from 6 to 35 percent, compared with 2 to 31 percent among men (Paltiel 1993). Although women are more likely to attempt suicide than men, however, more men die from suicide than women (Paltiel 1993).

Among women of reproductive age in developing countries, neuropsychiatric problems account for 12 percent of the disease burden—half due to depressive disorders. Suicide accounts for an additional 3 percent of deaths among women in this age group—more than are caused either by respiratory infections or motor vehicle accidents (World Bank 1993c). Because of its persistence, recurrence, and interference with well-being and performance, depression is the single most serious mental problem for women in every age group (Paltiel 1993).

Social, cultural and biological factors that contribute to mental health problems include: sexual abuse, rape, beatings, sexual harassment, fear of unwanted pregnancy, infertility, fear of STDs and HIV/AIDS; women's double work burden (inside and outside the home); low social status and gender discrimination; postpartum disorders, menopause and life changes associated with increasing age.

#### *Occupational and environmental health problems*

As part of the formal labor force, women are increasingly exposed to unsafe conditions, (including toxic chemicals, radiation, excessive noise, extreme temperatures, accidents, and violence). Women in formal employment work mainly in industries where working conditions are poorly regulated such as textiles, footwear, food production, electronics, and handicraft production. In industries where wages are low and employers value women for their dexterity, patience and docile nature, the workforce is almost entirely female. Where the proportion of women-headed households is high (as in most megacities in Latin America), women's dependence on their own earnings prevents them from negotiating for better pay and working conditions. Women are also more likely than men to work in small enterprises that lack the equipment and expertise to protect workers from workplace hazards.

In workplaces with inadequate safeguards, women workers are at risk of life-threatening injuries and chronic diseases. They may become partially or

permanently disabled due to back pain, the physical strain of repetitive tasks coupled with fast work speed, eye strain from close work, and deafness from excessive noise. Mexico's "maquiladora" assembly plants, which employ thousands of women, require long hours of detail work in unhealthy working conditions, including inadequate ventilation and lighting, poor sanitation, excessive noise, unsafe machinery, and exposure to toxic chemicals. Electronic assembly workers report a loss of visual acuity, and textile workers complain of pulmonary problems, dermatitis, hand injuries, and chronic back pain (Hovell et al. 1988). Exposure to toxic chemicals can cause cancer, dermatitis, miscarriage and birth defects. Women may be particularly susceptible to some toxic chemicals for biological reasons (Rovner 1993).

Most women in developing countries are employed in the informal sector as food vendors, petty traders, servants, launderers, beer brewers etc. These are low-wage positions with no security or fringe benefits, and women workers are generally too poor to purchase adequate health care or invest in protective clothing and equipment. Illiterate domestic workers and housewives who cannot read labels on toxic cleaning agents are at particular risk for poisoning. Women laborers and domestic workers also face the risk of sexual harassment, rape, and accidents. Commercial sex workers face many health risks, including RTIs, STDs, HIV/AIDS, violence, and unplanned pregnancy.

Among women farmers, the main cause of poor health is heavy work and multiple responsibilities within the household. Rural women's physical exertion, low status, and lack of control over resources affect their nutritional status, time available for leisure, health-seeking behavior, and general health status. Women employed in agribusiness and large farms are also exposed to large quantities of pesticides and fertilizers, often without appropriate safeguards.

Traditional women's tasks such as tending cooking fires and carrying water and fuel, also expose women to increased health risks and injuries. A study in India found that rural women cooking in poorly ventilated huts were exposed to a hundred times the acceptable level of suspended smoke particles—six times higher than other household members (Chatterjee 1991). Excessive smoke inhalation causes acute respiratory infections in infants, chronic obstructive lung disease and cor pulmonale (right-sided heart failure) in adults, and such adverse pregnancy outcomes as low birth-weight and still-

births. Studies in China and India found that up to half of adult women (few of whom smoke) suffer from chronic lung and heart diseases (Smith and Youcheng 1993). A study in Tienjin, China, found

that women living in urban slums who had long-term exposure to coal burned for heating and cooking had higher rates of lung cancer than other women (Young and Bertaud 1990).

# **Annex C. Recommended Interventions for Women's Health and Nutrition**

The following chart shows measures that community health workers, health centers and hospitals can take to improve women's health and nutrition. Many of these interventions need to be reinforced at different levels of the health care system in order to

maintain continuum in service delivery. This section also includes policy issues with direct and indirect consequences for women's health. Finally, it provides guidelines for messages targeted to the community and to health personnel.

# Annex C. Recommended Interventions for Women's Health and Nutrition

Community health worker level			
Life Cycle Stage	Services and Staff Training	Supplies and Equipment	Infrastructure
Infancy and Childhood	<ul style="list-style-type: none"> <li>Outreach to provide equal access to health services to girl children with regard to:               <ul style="list-style-type: none"> <li>Immunization coverage</li> <li>Management of diarrhea, acute respiratory infections and other childhood diseases</li> </ul> </li> <li>Counseling on equal exclusive breastfeeding for female and male infants (first 6 months)</li> <li>Growth monitoring and counseling on girls' nutritional requirements and consequences of poor nutrition</li> <li>Targeting of food and micronutrient supplementation to reach vulnerable girl children</li> <li>Recognition and reporting of female genital mutilation and other harmful differential practices towards girls</li> </ul>	<ul style="list-style-type: none"> <li>Weighing scales</li> <li>Growth and counseling cards</li> <li>Food supplements</li> <li>Essential micronutrients (Vitamin A, iodine, iron)</li> <li>Vaccines for childhood diseases</li> </ul>	<ul style="list-style-type: none"> <li>Mobile health units (outreach for immunization and other health services)</li> <li>Health posts</li> </ul>
Adolescence	<ul style="list-style-type: none"> <li>Educating the public on the nutritional needs of adolescent girls</li> <li>Counseling adolescents to avoid risk-taking behavior (smoking, alcohol, unprotected sex and drug use)</li> <li>Providing contraceptive services to sexually active adolescents</li> <li>Identifying pregnant adolescents and referring them for appropriate care</li> <li>Recognizing and referring STDs in adolescents</li> </ul>	<ul style="list-style-type: none"> <li>Iron and folate tablets</li> <li>Food supplements</li> <li>Contraceptives</li> <li>(See under supplies and equipment for maternal care)</li> </ul>	<ul style="list-style-type: none"> <li>Youth centers</li> <li>Health posts</li> <li>(See under infrastructure for maternal care)</li> </ul>
Reproductive Years: Prenatal Care	<ul style="list-style-type: none"> <li>Identifying pregnant women</li> <li>Counseling pregnant women on appropriate prenatal care and nutrition</li> <li>Providing iron and folate tablets</li> <li>Providing tetanus-toxoid immunization</li> <li>Monitoring nutrition and referring severely undernourished women to the health center</li> <li>Recognizing and referring women with danger signs in pregnancy (edema, blurred vision, bleeding)</li> <li>Providing antimalarials as necessary</li> <li>Counseling pregnant women on child spacing and breastfeeding</li> <li>Maintaining safe birth kits</li> <li>Maintaining a register on women of reproductive age</li> </ul>	<ul style="list-style-type: none"> <li>Iron and folate tablets</li> <li>Antimalarial tablets in endemic areas</li> <li>Blood pressure testing apparatus</li> <li>Maternal health cards</li> <li>Weighing scales</li> <li>Tetanus toxoid infections</li> </ul>	<ul style="list-style-type: none"> <li>Mobile health units for outreach</li> <li>Health posts</li> <li>Emergency transport vehicle</li> <li>Access to radio communication</li> </ul>

## Community health worker level

Life Cycle Stage	Services and Staff Training	Supplies and Equipment	Infrastructure
Reproductive Years: Labor and Delivery Care	<ul style="list-style-type: none"> <li>Using hygienic practices during delivery (safe birth kit)</li> <li>Detecting and referring birth complications (labor or rupture of membranes of more than 12 hours duration, prolapse of the cord, postpartum hemorrhage)</li> <li>Monitoring mothers and newborns after delivery</li> <li>Counseling on early and exclusive breastfeeding and care of newborn</li> </ul>	<ul style="list-style-type: none"> <li>Safe birth kits</li> </ul>	<ul style="list-style-type: none"> <li>Delivery room for normal deliveries</li> <li>Maternity hut</li> <li>Birthing center to provide delivery location outside of hospitals for normal deliveries in urban areas</li> <li>Emergency transport vehicle (includes community-organized transport)</li> <li>Access to radio communication</li> </ul>
Reproductive Years: Postpartum Care	<ul style="list-style-type: none"> <li>Counseling on nutrition and personal hygiene</li> <li>Counseling on exclusive breastfeeding and family planning methods (e.g. progestin-only pills)</li> <li>Monitoring for postpartum complications (fever, bleeding, breast abscess)</li> <li>Referring mothers with postpartum complications</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate contraceptive devices (e.g. condoms and progestin-only pills)</li> <li>Food supplements, micronutrient supplements (vitamin A, iron, folate, calcium)</li> </ul>	<ul style="list-style-type: none"> <li>Mobile health services for outreach</li> <li>Health posts</li> <li>Emergency transport vehicle</li> <li>Access to radio communication</li> </ul>
Reproductive Years: Unwanted Pregnancy and Safe Abortion	<ul style="list-style-type: none"> <li>Providing information and services on a wide range of traditional and modern contraceptive methods</li> <li>Detecting incomplete abortions and referring complications</li> <li>Counseling on dangers of unsafe abortion</li> </ul>	<ul style="list-style-type: none"> <li>Adequate supply of appropriate contraceptives (eg. condoms and oral contraceptives)</li> </ul>	<ul style="list-style-type: none"> <li>Emergency transport vehicle (includes community organized transport)</li> <li>Access to radio communication</li> </ul>
Reproductive Years: Other Health Issues	<ul style="list-style-type: none"> <li>Early detection and referral of reproductive tract infections (RTIs)</li> <li>Partner notification of persons with STDs and diagnosis and counseling of the partners</li> <li>Counseling on safe sexual behavior to prevent STDs (use of condoms, reduction in number of sexual partners)</li> <li>Adoption of safe birth practices to prevent non-sexually-transmitted RTIs</li> <li>Counseling on correct usage of condoms and other methods of contraception</li> <li>Counseling HIV positive and AIDS patients and their families</li> </ul>	<ul style="list-style-type: none"> <li>Antibiotics for treatment of RTIs</li> <li>Condoms</li> <li>Safe birth kits</li> </ul>	<ul style="list-style-type: none"> <li>Health posts</li> </ul>

Community health worker level			
Life Cycle Stage	Services and Staff Training	Supplies and Equipment	Infrastructure
Post-reproductive Years	<ul style="list-style-type: none"> <li>· Counseling older women on adequate nutrition</li> <li>· Care of older women with focus on family participation, including home nursing care</li> <li>· Counseling on avoidance of risk factors in diseases affecting older women (smoking, alcohol, inadequate exercise)</li> <li>· Palliative measures and home care for terminally ill women</li> </ul>	<ul style="list-style-type: none"> <li>· Food supplements and coupons</li> <li>· Blood pressure testing apparatus</li> </ul>	<ul style="list-style-type: none"> <li>· Home-nursing care facilities for aged women</li> </ul>
All ages: Violence against Women	<ul style="list-style-type: none"> <li>· Educating health workers to recognize and refer women whose injuries suggest domestic or other violence</li> <li>· Catalyzing discussion and community action around violence against women</li> <li>· Counseling against alcohol and drug abuse</li> </ul>		<ul style="list-style-type: none"> <li>· Support groups to provide counseling to victims of domestic violence (including self-help support groups)</li> </ul>

# Health Center level

Life Cycle Stage	Services and Staff Training	Supplies and Equipment	Infrastructure
Infancy and Childhood	<ul style="list-style-type: none"> <li>Ensuring equal access to health services to girl children with regard to: <ul style="list-style-type: none"> <li>• Immunization coverage</li> <li>• Management of diarrhea, acute respiratory infections and other childhood diseases</li> </ul> </li> <li>Counseling on equal exclusive breastfeeding of both female and male infants (first six months)</li> <li>Targeting of food and micronutrient supplements to reach vulnerable girl children</li> <li>Growth monitoring and counseling on nutritional requirements of the girl child and consequences of poor nutrition</li> <li>Recognition and prompt reporting of female genital mutilation and other harmful differential practices towards girls</li> </ul>	<ul style="list-style-type: none"> <li>• Weighing scales</li> <li>• Growth and counseling cards</li> <li>• Food supplements</li> <li>• Essential micronutrients (vitamin A, iodine)</li> <li>• Vaccines for childhood diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Health centers</li> </ul>
Adolescence	<ul style="list-style-type: none"> <li>Managing or referring problems specific to adolescent pregnancy (pregnancy-induced hypertension, cephalo-pelvic disproportion, low birth weight)</li> <li>Managing or referring abortion complications in adolescents</li> <li>Counseling on nutritional needs of adolescent girls</li> <li>Counseling adolescents to avoid risk-taking behavior (unprotected sex, smoking, alcohol and drug use) and referral to de-addiction centers</li> <li>Detecting and treating STDs and referring complications or sequelae</li> <li>Providing contraceptive counseling to sexually active adolescents</li> </ul>	<ul style="list-style-type: none"> <li>• Iron and folate tablets</li> <li>• Food supplements</li> <li>• Contraceptives</li> <li>• (See under supplies and equipment for maternal care and safe abortion)</li> </ul>	<ul style="list-style-type: none"> <li>• Youth centers</li> <li>• Health centers</li> <li>• (See under infrastructure for maternal care and safe abortion)</li> </ul>

Health Center level				
Life Cycle Stage	Services and Staff Training	Supplies and Equipment	Infrastructure	
Reproductive Years: Prenatal Care	<ul style="list-style-type: none"> <li>· Providing prenatal screening, management and referral for anemia, and infections including STDs</li> <li>· Providing tetanus-toxoid immunization</li> <li>· Counseling on prenatal self-care including nutrition, hygiene and danger signs in pregnancy</li> <li>· Managing maternity waiting homes</li> <li>· Referring women with high-risk pregnancies to the first referral level</li> </ul>	<ul style="list-style-type: none"> <li>· Iron and folate tablets</li> <li>· Tetanus-toxoid injections</li> <li>· Blood pressure testing apparatus</li> <li>· Parenteral fluids and essential drugs (iron dextran, antibiotics, antimalarials, sedatives)</li> <li>· Laboratory equipment for antenatal examination (Hb estimation, complete blood count, blood grouping and Rh typing, serological examination for syphilis, dipsticks for urine examination, stool examination)</li> </ul>	<ul style="list-style-type: none"> <li>· Health centers</li> <li>· Maternity waiting homes for rural women who are at risk for complications and may need institutional care</li> <li>· Emergency transport vehicle</li> <li>· Radio communication</li> </ul>	
Reproductive Years: Labor and Delivery Care	<ul style="list-style-type: none"> <li>· Conducting routine deliveries</li> <li>· Managing complications (postpartum hemorrhage, eclampsia, and retained placenta) and prompt referral if not responding to treatment</li> <li>· Monitoring mothers and newborns after delivery</li> <li>· Counseling on early and exclusive breastfeeding and care of the newborn</li> </ul>	<ul style="list-style-type: none"> <li>· Partogram</li> <li>· Essential obstetric kit for normal delivery</li> <li>· Vacuum extractor and forceps for prolonged labor</li> <li>· Intravenous fluids and antibiotics</li> <li>· Oxytocics</li> </ul>	<ul style="list-style-type: none"> <li>· Delivery room for normal deliveries</li> <li>· Separate labor room for pregnant women with sepsis</li> <li>· Emergency transport vehicle</li> <li>· Radio communication</li> </ul>	
Reproductive Years: Postpartum Care	<ul style="list-style-type: none"> <li>· Conducting postpartum checkups for mother</li> <li>· Managing and referring postpartum complications (puerperal sepsis, secondary hemorrhage, thrombophlebitis)</li> <li>· Providing contraceptive counseling and services (barrier methods, IUDs, injectables, implants, progestin-only pills, sterilization, and natural family planning) and breastfeeding information</li> </ul>	<ul style="list-style-type: none"> <li>· Appropriate contraceptive devices (condoms, diaphragms, progestin-only pills, injectables, implants, spermicides, and IUDs)</li> <li>· Food supplements, Vitamin A, implants, iron, folate, calcium</li> <li>· Equipment for surgical contraception.</li> <li>· Intravenous fluids and antibiotics</li> </ul>	<ul style="list-style-type: none"> <li>· Health centers</li> <li>· Emergency transport vehicle</li> <li>· Radio communication</li> </ul>	

## Health Center level

Life Cycle Stage	Services and Staff Training	Supplies and Equipment	Infrastructure
Reproductive Years: Unwanted Pregnancy and Safe Abortion	<ul style="list-style-type: none"> <li>· Providing clinical and nonclinical family planning services</li> <li>· Providing safe abortion care (where legal), treatment of incomplete abortion (with manual vacuum aspiration) and managing abortion complications (with manual vacuum aspiration, antibiotics, and fluid replacement)</li> <li>· Training service providers to perform vacuum aspiration for first trimester abortions</li> <li>· Providing post-abortion counseling services</li> </ul>	<ul style="list-style-type: none"> <li>· Contraceptives (condoms, diaphragms, oral contraceptives, IUDs, injectables, implants, spermicides)</li> <li>· Manual vacuum aspirators</li> <li>· Antibiotics (for septic abortions)</li> <li>· Parenteral fluids (for shock)</li> <li>· Oxytocics (for hemorrhage)</li> </ul>	<ul style="list-style-type: none"> <li>· Emergency transport vehicle</li> <li>· Radio communication</li> </ul>
Reproductive Years: Other Health Issues	<ul style="list-style-type: none"> <li>· Early detection and prompt treatment of RTIs</li> <li>· Syndromic diagnosis of STDs (as recommended by WHO)</li> <li>· Partner notification for diagnosis, treatment and counseling of patients with STDs</li> <li>· Counseling on safe sexual behavior to prevent STDs (use of condoms, reduction in number of sexual partners)</li> <li>· Maintaining registers to assess the prevalence of STDs (including AIDS) in the area</li> <li>· Vigilant drug supply management (against thefts, stock-outs)</li> <li>· Counseling on dangers of drug use and sharing needles</li> </ul>	<ul style="list-style-type: none"> <li>· Antibiotics for treatment of RTIs</li> <li>· Condoms</li> <li>· Laboratory equipment to test for RTIs including STDs (eg. vaginal, cervical and urethral swabs, testing for syphilis)</li> </ul>	<ul style="list-style-type: none"> <li>· Decentralized distribution of drugs (more distribution warehouses) to speed delivery</li> <li>· Efficient communication channels and detailed reporting to ensure effective partner notification</li> </ul>

Health Center level			
Life Cycle Stage	Services and Staff Training	Supplies and Equipment	Infrastructure
Post-Reproductive Years	<ul style="list-style-type: none"> <li>· Counseling older women on adequate nutrition</li> <li>· Educating women about risk factors particularly significant in older women (smoking, alcohol, inadequate exercise)</li> <li>· Educating health workers about appropriate dosage and side effects of drugs commonly prescribed for older women (antidepressants, antidiabetics, antihypertensives)</li> <li>· Screening for cervical and breast cancer (Pap smear, physical examination of breast)</li> <li>· Early detection and management of diseases of the elderly (eg. cervical cancer, hypertension, diabetes)</li> </ul>	<ul style="list-style-type: none"> <li>· Food coupons</li> <li>· Blood pressure testing apparatus</li> <li>· Equipment for performing Pap smears</li> <li>· Essential drugs (antidepressants, antidiabetics, antihypertensives)</li> </ul>	<ul style="list-style-type: none"> <li>· Facilities for cryotherapy and loop excision (to treat severe dysplasia and early cervical cancer)</li> </ul>
All ages: Violence Against Women	<ul style="list-style-type: none"> <li>· Training health workers on gender-based violence</li> <li>· Counseling against alcohol and drug abuse among adolescents and adults</li> <li>· Counseling to assuage victim's guilt and reinforce principle that no one deserves to be beaten</li> </ul>		<ul style="list-style-type: none"> <li>· Support groups to provide counseling to victims of domestic violence</li> </ul>

Life Cycle Stage	Staff and Services Training	Supplies and Equipment	Infrastructure
Infancy and Childhood	<ul style="list-style-type: none"> <li>Ensuring equal access to health services to girl children with regard to:               <ul style="list-style-type: none"> <li>Management of severe malnutrition</li> <li>Management of serious childhood diseases</li> </ul> </li> <li>Promoting exclusive breastfeeding for female and male infants equally (first 6 months)</li> <li>Recognition and management of female genital mutilation and other harmful differential practices against girls</li> </ul>	<ul style="list-style-type: none"> <li>Antibiotics and equipment to deal with serious childhood diseases</li> <li>Food and micronutrient supplements</li> </ul>	<ul style="list-style-type: none"> <li>Hospitals</li> </ul>
Adolescence	<ul style="list-style-type: none"> <li>Managing problems specific to adolescent pregnancy (pregnancy induced hypertension, cephalo-pelvic disproportion and low birth weight)</li> <li>Treating complications of induced abortion in adolescents (septic abortion, perforated uterus)</li> <li>Treating complications and sequelae of STDs in adolescents</li> </ul>	<ul style="list-style-type: none"> <li>Iron and folate tablets</li> <li>Food supplements</li> <li>Contraceptives</li> <li>Surgical and medical supplies, and equipment as recommended by WHO (1991a) for obstetric care</li> </ul>	<ul style="list-style-type: none"> <li>Hospitals</li> <li>Infrastructure for maternal care and safe abortion</li> </ul>
Reproductive Years: Prenatal Care	<ul style="list-style-type: none"> <li>Providing prenatal care for women at high risk or with medical problems</li> </ul>	<ul style="list-style-type: none"> <li>Essential drugs for treating infections and other medical problems (antibiotics, antihypertensives, anticonvulsants)</li> <li>Laboratory equipment for referral examination (testing for medical problems such as hepatitis, STDs, kidney disease)</li> </ul>	<ul style="list-style-type: none"> <li>Antenatal clinics</li> </ul>
Reproductive Years: Labor and Delivery Care	<ul style="list-style-type: none"> <li>Providing surgical obstetrics and anesthesia services</li> <li>Providing medical treatment for pregnancy complications (such as sepsis, shock, and eclampsia)</li> <li>Counseling on early and exclusive breastfeeding and care of the newborn</li> </ul>	<ul style="list-style-type: none"> <li>Surgical and medical supplies and equipment as recommended by WHO (1991a)</li> </ul>	<ul style="list-style-type: none"> <li>Facilities as recommended by WHO for providing surgical obstetric services</li> <li>Blood bank facilities</li> <li>Ambulance</li> <li>Radio communication</li> </ul>

First Referral level				
Life Cycle Stage	Staff and Services Training	Supplies and Equipment	Infrastructure	
Reproductive Years: Postpartum Care	<ul style="list-style-type: none"> <li>· Counseling on nutrition and infant care</li> <li>· Providing family planning counseling and services</li> <li>· Managing postpartum complications (puerperal sepsis, secondary hemorrhage, thrombophlebitis)</li> </ul>	<ul style="list-style-type: none"> <li>· Appropriate contraceptive devices (equipment for surgical contraception, IUDs, progestin-only pills, injectables, implants, barrier methods)</li> </ul>	<ul style="list-style-type: none"> <li>· Postpartum clinics</li> <li>· Family planning clinics</li> </ul>	
Reproductive Years: Unwanted Pregnancy and Safe Abortion	<ul style="list-style-type: none"> <li>· Providing clinical and nonclinical contraceptive services</li> <li>· Providing safe abortion care (where legal), treatment of incomplete abortion (with vacuum aspiration) and managing complications of abortions (with general anesthesia, antibiotics, and fluid replacement)</li> <li>· Training service providers to perform first and second trimester abortions (vacuum aspiration, dilatation and vacuum aspiration and two stage evacuation)</li> <li>· Providing post-abortion counseling</li> </ul>	<ul style="list-style-type: none"> <li>· Adequate supply of appropriate contraceptives (condoms, IUDs, diaphragms, oral contraceptives, injectables, implants) including equipment for surgical contraception (eg. sterilization)</li> <li>· Manual vacuum aspirators, dilatation and curettage instruments</li> <li>· Antibiotics (for septic abortions)</li> <li>· Parenteral fluids (for shock)</li> <li>· Oxytocics and safe blood for transfusion (for hemorrhage)</li> </ul>	<ul style="list-style-type: none"> <li>· Ambulance</li> <li>· Radio communication</li> <li>· Facilities for surgical interventions (hysterectomy, repair of perforated uterus)</li> </ul>	
Reproductive Years: Other Health Issues	<ul style="list-style-type: none"> <li>· Appropriate treatment of advanced RTIs</li> <li>· Recognition of and testing for antibiotic resistance</li> <li>· Treatment of complications and sequelae of RTIs</li> </ul>	<ul style="list-style-type: none"> <li>· Antibiotics for treatment of RTIs</li> <li>· Laboratory equipment to test for RTIs (vaginal, cervical and urethral swabs, Pap smear, culture testing for STDs, testing for sensitivity to antibiotics in resistant infections)</li> <li>· Screening blood for safety in use for transfusions</li> </ul>	<ul style="list-style-type: none"> <li>· Hospitals</li> </ul>	

First Referral level				
Life Cycle Stage	Staff and Services Training	Supplies and Equipment	Infrastructure	
Post-reproductive Years	<ul style="list-style-type: none"> <li>Training health workers to prescribe appropriate drugs in the correct dosage to older women</li> <li>Educating women on the side effects and dangers of overdosage Managing referral cases with cancers (cervical and breast) and chronic diseases (hypertension, heart disease, diabetes)</li> </ul>	<ul style="list-style-type: none"> <li>Equipment for performing Pap smears</li> <li>Mammography (for breast cancer screening)</li> <li>Essential drugs for treating diseases of the elderly (antihypertensiveness, antidiabetic)</li> </ul>	<ul style="list-style-type: none"> <li>Facilities for cryotherapy and loop excision for early cervical cancer</li> <li>Surgical facilities for treating gynecological cancers</li> </ul>	
All ages: Violence Against Women	<ul style="list-style-type: none"> <li>Training health workers to recognize and report injuries suggestive of domestic violence</li> <li>Counseling adolescents and adults about harmful effects of alcohol and drug abuse</li> <li>Collecting legal evidence of domestic violence for prosecution</li> <li>Running treatment programs for individuals who are addicted to drugs and alcohol</li> </ul>		<ul style="list-style-type: none"> <li>Service centers to assist women and their families who have undergone assault, sexual abuse and rape (eg. shelters, crisis centers, self-support groups, legal assistance centers)</li> </ul>	

Policy Dialogue			
Target Audience: Policymakers, program managers, community leaders, women's groups, health advocates			
Life Cycle Stage	Policy strategies with direct impact	Policy strategies with indirect impact	
Infancy and Childhood	<ul style="list-style-type: none"> <li>Integrate maternal and child health and nutrition programs to provide optimal services for both girls and boys</li> <li>Establish vital registration system for births and deaths</li> <li>Provide food subsidies to vulnerable groups</li> <li>Fortify foods with iodine and Vitamin A</li> </ul>	<ul style="list-style-type: none"> <li>Regulate use of medical tests to avoid misuse (sex determination as a means to abort female fetuses)</li> <li>Improve enrollment and retention rates of girls in schools</li> <li>Deter sex selection and female infanticide</li> </ul>	
Adolescence	<ul style="list-style-type: none"> <li>Assess adolescent health and nutrition needs locally to determine services</li> <li>Improve adolescents' access to contraception and abortion</li> <li>Attract participation in health programs (school outreach programs, family life education, multi-service centers)</li> </ul>	<ul style="list-style-type: none"> <li>Improve school enrollment among adolescent girls</li> <li>Change regulations to allow pregnant girls to continue their schooling and encourage them to complete their education</li> <li>Broadcast information on sexual issues</li> <li>Raise and enforce the legal age of marriage</li> <li>Prohibit prostitution among adolescents</li> <li>Restrict advertising of and access to tobacco and alcohol</li> <li>Establish de-addiction centers especially for youth</li> </ul>	
Reproductive Years: Maternity care	<ul style="list-style-type: none"> <li>Establish vital registration system to record maternal deaths</li> <li>Fortify common foods with iron and iodine to provide micronutrient supplements</li> <li>Target food supplements to malnourished, pregnant and lactating women</li> <li>Delegate responsibility for providing maternal care to appropriate levels (management of routine deliveries to traditional birth attendants and community health workers; management of retained placenta and eclampsia to midwives; management of serious complications to first-referral hospitals)</li> <li>Open or expand midwifery training schools</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that health providers are adequately deployed to rural areas</li> <li>Increase accessibility to maternal care centers by improving roads, transport and modes of communication</li> <li>Promote breastfeeding at the workplace</li> <li>Establish and monitor quality child care centers</li> <li>Promote intersectoral coordination on maternal care issues (education, labor)</li> <li>Provide maternity leave and other benefits to promote maternal and child health</li> </ul>	
Reproductive Years: Unwanted Pregnancy and Safe Abortion	<ul style="list-style-type: none"> <li>Provide contraceptive services to men and women without restrictions based on age or marital status or spousal consent requirements</li> <li>Provide safe abortion management including post-abortion services on birth control</li> <li>Protect women's reproductive rights, including legal access to appropriate contraception and abortion services</li> <li>Allocate public health resources to preventive health care and programs to prevent unwanted pregnancies</li> </ul>	<ul style="list-style-type: none"> <li>Promote government, NGO and private sector cooperation and cofinanced reproductive health services with NGOs and the private sector</li> <li>Legislate on a father's economic and legal responsibilities to his child inside and outside of marriage</li> </ul>	

Policy Dialogue			
Target Audience: Policymakers, program managers, community leaders, women's groups, health advocates			
Life Cycle Stage	Policy strategies with direct impact	Policy strategies with indirect impact	
Reproductive Years: Other Health Issues	<ul style="list-style-type: none"> <li>Develop a national notification system to assess the magnitude of the problem of STDs</li> <li>Formulate a strategy based on the above findings to allocate resources to control measures and evaluate impact of STD programs</li> <li>Set national guidelines regarding integration of services at and between levels (vertical service delivery, integration with family planning and maternal and child health activities)</li> <li>Target high risk groups for screening (sex workers and their clients, intravenous-drug users, migrant labor) for STDs</li> <li>Improve logistics of drug supply (adequate supply, competitive prices)</li> </ul>	<ul style="list-style-type: none"> <li>Improve medical curricula to cover STD management and counseling</li> <li>Promote condom use among prostitutes and their clients</li> <li>Provide alternative employment for sex workers</li> <li>Prohibit the usage of drugs, particularly intravenous drugs</li> <li>Discourage female genital mutilation</li> <li>Provide more services through female health providers</li> <li>Reduce/remove import duties on condoms and other contraceptives</li> </ul>	
Post-reproductive Years	<ul style="list-style-type: none"> <li>Expand surveillance data gathering to document the health status and needs of older women</li> <li>Introduce health counseling and screening programs (hypertension) at the work place</li> <li>Establish day care centers and homes for aged women, in cooperation with NGOs and women's organizations</li> <li>Encourage NGOs to initiate community programs oriented toward inclusion of older women</li> <li>Promote alternative community care models (day care, short hospital stays) tailored to the needs of older women</li> </ul>	<ul style="list-style-type: none"> <li>Provide some form of health insurance for needy older women and men</li> <li>Develop social safety nets for vulnerable groups, particularly older women</li> <li>Provide suitable housing (such as rooming units) to enable elderly women to stay close to their families</li> <li>Promote interdisciplinary coordination (medical, social and psychological services) for the care of older women</li> </ul>	

Policy Dialogue		
Target Audience: Policymakers, program managers, community leaders, women's groups, health advocates		
Life Cycle Stage	Policy strategies with direct impact	Policy strategies with indirect impact
<p>All ages:</p> <p>Violence Against Women</p>	<ul style="list-style-type: none"> <li>· Legislate to criminalize domestic violence and other crimes against women</li> <li>· Introduce reforms to facilitate prosecution of gender-based crimes (rape, domestic assault)</li> <li>· Remove barriers that interfere with the ability of women to escape violent relationships (barriers to divorce)</li> <li>· Train police and prosecutors about gender-based violence</li> </ul>	<ul style="list-style-type: none"> <li>· Make gender-awareness training part of the law school curriculum</li> <li>· Include questions on gender violence in national health surveys</li> <li>· Break down crime statistics by gender for both perpetrator and victim</li> <li>· Improve women's access to productive resources (land, credit, wage employment)</li> <li>· Introduce gender-awareness training, parenting skills, and non-violent conflict resolution into school curricula</li> <li>· Work with the media to encourage positive images of equitable relationships and to remove gratuitous violence</li> <li>· Support NGOs that provide human rights education and legal literacy training for women</li> </ul>

Information, Education and Communication			
TARGET AUDIENCE: General public, Health care providers			
Life Cycle Stage	Clients	Health Providers	
Infancy and Childhood Diseases	<ul style="list-style-type: none"> <li>Emphasize role of appropriate nutrition, particularly a girl's intrahousehold share of food, in her well-being</li> <li>Build awareness of girls' nutritional requirements</li> <li>Encourage equal access to health care facilities for all children</li> <li>Improve enrollment and retention rates of girls in schools</li> <li>Mobilize public opinion against the practice of female genital mutilation</li> </ul>	<ul style="list-style-type: none"> <li>Stress importance of documenting any form of physical violence against girls</li> <li>Warn against unethical medical tests</li> </ul>	
Adolescence	<ul style="list-style-type: none"> <li>Highlight importance of appropriate dietary habits for girls during adolescence</li> <li>Educate young people about reproductive physiology, sexuality and reproductive health</li> <li>Provide sex education in schools, including information on contraception and the dangers of unsafe abortion</li> <li>Educate young people about the need to delay first pregnancy</li> <li>Encourage peer groups to promote health education among adolescents</li> <li>Highlight both short-term and long-term dangers of substance abuse</li> <li>Promote development of practical skills and self-esteem among female adolescents</li> </ul>	<ul style="list-style-type: none"> <li>Promote awareness among health workers of special health needs of adolescent girls (problems of early childbearing, nutritional requirements, STDs, contraceptive needs)</li> <li>Ensure health information is kept confidential to gain patient cooperation</li> </ul>	

Information, Education and Communication			
TARGET AUDIENCE: General public, Health care providers			
Life Cycle Stage	Clients	Health Providers	
Maternity Care	<ul style="list-style-type: none"> <li>Promote early contact with health provider and antenatal care (diet, rest, regular visits)</li> <li>Educate the public to recognize danger signs in pregnancy</li> <li>Disseminate information about available pregnancy services</li> <li>Promote hygienic birth practices</li> <li>Develop community transportation schemes and other means to increase women's access to emergency care</li> <li>Counsel women about alternative birth options (maternity huts, birthing centers, maternity waiting homes)</li> <li>Promote exclusive breastfeeding and appropriate diet (calcium-rich foods, increased caloric consumption) for lactating mother</li> <li>Disseminate information about family planning, particularly temporary methods to achieve birth spacing of at least two years</li> <li>Encourage male responsibility for reproduction and use of contraceptives</li> <li>Educate the public to recognize symptoms of STDs</li> <li>Counsel women about prevention of STDs and HIV infection</li> </ul>	<ul style="list-style-type: none"> <li>Promote timely referrals for additional care</li> <li>Educate traditional birth attendants and community health workers about dangers of unhygienic birth practices</li> <li>Promote the use of safe birth kits by traditional birth attendants and community health workers</li> <li>Have midwives and physicians promote traditional breastfeeding intervals</li> <li>Promote the use of proper family planning counseling techniques by health providers</li> </ul>	
Unwanted Pregnancy and Safe Abortion	<ul style="list-style-type: none"> <li>Educate the public about reproductive physiology, sexuality and reproductive health</li> <li>Include sex education in school curricula</li> <li>Provide full information on contraception, its availability, benefits and side effects</li> <li>Educate women to recognize pregnancy early and to use available services</li> <li>Provide information on the legal status of abortion and where to find services</li> <li>Disseminate information on the maternal health hazards connected with unsafe abortion</li> <li>Educate men about how to participate in family planning and be responsible fathers and partners</li> </ul>	<ul style="list-style-type: none"> <li>Train traditional birth attendants and community health workers to recognize pregnancy early and to provide appropriate counseling</li> <li>Increase traditional birth attendants and community health workers' awareness of possible complications from unsafe abortion</li> <li>Emphasize to traditional birth attendants, community health workers and nurses, signs of incomplete abortion and importance of prompt referral.</li> <li>Train health providers to provide counseling on appropriate post-abortion contraceptive measures</li> </ul>	

## Information, Education and Communication

TARGET AUDIENCE: General public, Health care providers

Life Cycle Stage	Clients	Health Providers
Other Reproductive Health Issues	<ul style="list-style-type: none"> <li>Disseminate information about the modes of transmission, and signs and symptoms of STDs</li> <li>Disseminate information about the complications and sequelae of STDs</li> <li>Disseminate information about the methods to prevent STD transmission (monogamy, use of condoms)</li> <li>Encourage regular screening, and early and complete treatment for STDs</li> <li>Provide sex education in schools to adolescents</li> <li>Destigmatize the use of condoms</li> <li>Educate the public about the dangers of drug use and sharing of needles</li> <li>Promote voluntary donation of blood (as against professional donors)</li> <li>Educate the public about the importance of safe birth location and trained attendant at delivery</li> </ul>	<ul style="list-style-type: none"> <li>Promote safe birth practices among traditional birth attendants and community health workers</li> <li>Train traditional birth attendants, community health workers and community nurses to detect RTIs early, and treat or refer patients in a timely manner</li> <li>Train health workers to treat women with dignity and courtesy</li> <li>Educate health providers about showing cultural sensitivity when dealing with sexual behavior</li> </ul>
Women's Health and Nutrition beyond Reproductive Age	<ul style="list-style-type: none"> <li>Promote traditional family attitudes toward the elderly, particularly women</li> <li>Educate women about the importance of good nutrition and avoidance of risky behavior to health later in life</li> <li>Stress the importance of self-care in preventing chronic diseases</li> <li>Educate women about stress management, effects of working conditions on their health, and safe and effective use of over-the-counter drugs</li> <li>Reinforce positive health behaviors (physical activity, adequate diet)</li> <li>Encourage mutual help groups to help the elderly rely on themselves and each other</li> <li>Reinforce the cost-effectiveness and psychological benefits of caring for the elderly at home</li> </ul>	<ul style="list-style-type: none"> <li>Have community health workers and nurses stress the importance of preventive measures (healthy diet, regular exercise, regular screening) in avoiding chronic diseases</li> <li>Inform physicians on the effectiveness of home care for the elderly</li> <li>Educate health providers about the importance of providing pain relief and other palliative measures in the care of terminally ill patients (advanced breast cancer)</li> </ul>
Violence against Women	<ul style="list-style-type: none"> <li>Conduct education campaigns to make violence socially unacceptable</li> <li>Highlight cost of violence to society (social, health-care, criminal)</li> <li>Encourage men to resolve differences non-violently</li> <li>Mobilize public opinion against all forms of violence against women</li> <li>Inform couples of where and how to get help for problems before they escalate</li> <li>Conduct health campaigns to discourage use of alcohol and drugs</li> </ul>	<ul style="list-style-type: none"> <li>Make health workers aware of the prevalence of domestic violence and its effects on women</li> <li>Stress key role that health provider plays in early detection, treatment and referral of victims of violence</li> <li>Highlight importance of accurate and complete documentation of the physical consequences of violence (rape, battery) for both health and legal purposes</li> </ul>

## **Annex D. Indicators of Women's Health and Nutrition**

## Annex D. Indicators of Women's Health & Nutrition

Using the following indicators policymakers will be able to monitor both the progress and outcome of national programs for women's health.

<i>Life Cycle Stage</i>	<i>Indicator</i>	<i>Measure</i>	<i>Interpretation</i>	<i>Source</i>
Infancy and Childhood	Female infant mortality rate	The number of female infants who die before the age of one per 1,000 female infant births in a given year.	High levels reflect problems related to childbirth and/or inadequate care of female infants.	Hospital or clinic records, vital registration
	Female child mortality rate	The number of deaths among girls aged 1 to 4 in a given year per 1,000 female children in that age group at the mid-point of that year.	This indicator is of particular significance when compared to the rate for male children since it is an estimate of socioeconomic and cultural factors that may overcome the biological advantage of girl children.	Community survey, hospital or clinic records, vital registration
	Immunization coverage ratio	Ratio of female infants to male infants covered by immunization (for all six major childhood diseases as recommended by WHO).	A ratio of less than one (after adjusting for expected numbers in an age group) suggests discrimination against female infants.	Community survey, hospital or clinic records
	Nutrition status	Percentage of girls with protein-energy malnutrition as measured by:  • weight for height	A high percentage of girls with protein-energy malnutrition suggests inadequate access to food and/or strenuous physical activity.  Wasting—indicates acute malnutrition.	Community survey, hospital or clinic records

<i>Life Cycle Stage</i>	<i>Indicator</i>	<i>Measure</i>	<i>Interpretation</i>	<i>Source</i>
Infancy and Childhood	Nutrition status	Percentage of girls with protein-energy malnutrition as measured by:	Stunting - reflects chronic malnutrition, especially in early childhood.  This is the most common indicator for malnutrition. It is a composite of weight for height and height for age.	Community survey, hospital or clinic records
		• height for age		
		• weight for age		
Adolescence	Prevalence of adolescent pregnancies	Proportion of young women who became pregnant before age 19.	Relevant for the identification of pregnancy complications because of the mother's physical and psychological immaturity. Such problems are compounded if the women is unmarried.	Surveys, hospital records, interviews with key informants

<i>Life Cycle Stage</i>	<i>Indicator</i>	<i>Measure</i>	<i>Interpretation</i>	<i>Source</i>
Adolescence	Contraceptive usage	Percentage of sexually active adolescents who use family planning.	Indicates patterns of sexual behavior, knowledge and access to contraception.	Hospital or clinic records
	STD prevalence	Percentage of adolescents who contract an STD.	Indicates patterns of sexual behavior, degree of female negotiation power, use of barrier methods, and access to health services.	Hospital or clinic records
	Prevalence of traditional practices harmful to adolescent girls	Percentage of female adolescents who have been subjected to genital mutilation.	Suggests discrimination against females, and deleterious social and cultural attitudes towards women.	Focus groups, surveys
	Abortion prevalence	Proportion of adolescents who have had an abortion.	Indicates access of adolescents to contraception, appropriate counseling and sex education.	Community survey, focus groups
Reproductive age group	Maternal Mortality Ratio (MMRatio)	The annual number of maternal deaths per 100,000 live births. <u>Maternal death</u> is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from incidental or accidental causes.	Often erroneously referred to as maternal mortality rate (WHO 1991a). It represents <u>obstetric risk</u> . Interventions that improve obstetric outcomes will reduce the ratio.	Community survey, hospital records, vital registration

<i>Life Cycle Stage</i>	<i>Indicator</i>	<i>Measure</i>	<i>Interpretation</i>	<i>Source</i>
A) Pregnancy and delivery care	Maternal mortality rate	The number of maternal deaths per 100,000 women of reproductive age (usually taken as 15 to 45 years or 15 to 49 years).	Includes obstetric risk and risks of pregnancy (abortions, ectopic pregnancies). Interventions that affect fertility and obstetric outcomes will alter the rate.	Community survey, vital registration, hospital records
	Low birth weight	Percentage of infants born in a particular year who weigh less than 2500 grams at the time of birth.	Useful as an indirect measure of maternal malnutrition. Low birth weight is caused by either short duration of gestation, retarded intrauterine growth, or both. Among the major factors contributing to poor intrauterine growth are low calorie intake or weight gain during pregnancy and low pre-pregnancy weight.	Community survey, hospital records
	Total abortion rate	The number of abortions (all types), expressed per 1,000 women of reproductive age.	Useful as an indicator of the success of contraceptive services in meeting the needs of women. However, reliable information on abortions (particularly unsafe abortions, which have the most serious impact on women's reproductive health) is very difficult to collect.	Community survey, hospital records, focus groups
	Total fertility rate (TFR)	The number of children a woman would have at the end of her reproductive life if she survived to that age and experienced a given set of age-specific fertility rates. It is calculated by adding the age-specific rates for a given year.	Indicates average family size; related to the role of women and reproduction, and access to family planning.	Census survey, vital registration
	Lifetime risk of death (LTR)	The cumulative risk of death from motherhood: LTR = $1 - (1 - \text{MMRatio})^{\text{TFR}}$	Indicates risks associated with each pregnancy and number of times a woman becomes pregnant.	Survey, vital registration

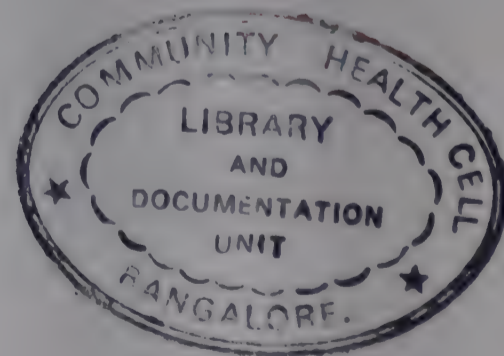
<i>Life Cycle Stage</i>	<i>Indicator</i>	<i>Measure</i>	<i>Interpretation</i>	<i>Source</i>
A) Pregnancy and delivery care	Utilization of health services	<ul style="list-style-type: none"> <li>• Proportion of women with access to maternity care (within one hour walk or travel time).</li> <li>• Proportion of women who received any prenatal care from trained medical staff.</li> <li>• Proportion of women who received prenatal care before 20 weeks and/or after 38 weeks.</li> <li>• Proportion of pregnant women who received tetanus-toxoid immunization.</li> <li>• Proportion of pregnant women who took iron and folate supplementation.</li> <li>• Proportion of pregnant women who were referred and accepted referral.</li> <li>• Proportion of women who received postnatal care from trained medical staff.</li> </ul>	Indicates availability and accessibility of health services, women's perceptions of reproductive risks, cultural and social conditions, socioeconomic status.	Census, survey
	Reproductive health status	<ul style="list-style-type: none"> <li>• Percentage of pregnant women who are anemic (moderate = 7-11 g/dl; severe = &lt;7g/dl).</li> <li>• Percentage of women gaining less than 1kg per month during second and third trimester of pregnancy.</li> </ul>	Indicates level of maternal nutrition (both before and during pregnancy), risks to mother and baby, and dietary practices.	Community survey, hospital records

<i>Life Cycle Stage</i>	<i>Indicator</i>	<i>Measure</i>	<i>Interpretation</i>	<i>Source</i>
A) Pregnancy and delivery care	Quality of care	<ul style="list-style-type: none"> <li>• Percentage of complications diagnosed during prenatal surveillance.</li> <li>• Percentage of health facilities capable of performing cesarean sections.</li> <li>• Mean waiting time at prenatal clinics.</li> <li>• Percentage of women who understood treatment received.</li> <li>• Percentage of women satisfied with treatment.</li> <li>• Percentage of women who delivered in an institution and who were told about family planning methods.</li> <li>• Ratio of midwives to population.</li> <li>• Prevalence of postpartum infections acquired in a hospital or medical facility.</li> </ul>	Indicates regional and national level of health services, health provider training, health worker values, government commitment.	Observations, hospital records, interviews with patients and providers

<i>Life Cycle Stage</i>	<i>Indicator</i>	<i>Measure</i>	<i>Interpretation</i>	<i>Source</i>
A) Pregnancy and delivery care	Quality of care	<ul style="list-style-type: none"> <li>• Proportion of health workers able to perform life-saving obstetric functions.</li> <li>• Knowledge, attitudes and practices of health workers toward reproductive health.</li> <li>• Beliefs and attitudes of health workers and traditional birth attendants regarding problems with birthing, pregnancy danger signs and responses.</li> </ul>	Indicates regional and national level of health services, health provider training, health worker values, government commitment.	Observations, hospital records, interviews with patients and providers, maternal mortality committees
B) Unwanted pregnancy and abortion:	Wantedness of pregnancy	<ul style="list-style-type: none"> <li>• Proportion of pregnancies not intended.</li> <li>• Desired family size.</li> </ul>	Can indicate the influence of cultural and religious values, role of the woman in the family and the community, and coverage of family planning services.	Surveys, interviews with patients and providers
	Availability of quality services	<ul style="list-style-type: none"> <li>• Percentage of women with access to family planning and safe abortion services.</li> <li>• Percentage of women who receive contraceptive counseling after an abortion.</li> <li>• Proportion of health providers skilled in providing family planning and abortion services.</li> <li>• Knowledge, attitudes and practices of health workers regarding contraception and abortion.</li> </ul>	Reflects coverage and quality of family planning and abortion services.	Surveys, interviews with patients and providers

<i>Life Cycle Stage</i>	<i>Indicator</i>	<i>Measure</i>	<i>Interpretation</i>	<i>Source</i>
C) Other reproductive health issues	Prevalence of sexually transmitted diseases (STDs)	<ul style="list-style-type: none"> <li>Percentage of women who are diagnosed as having an STD.</li> </ul>	Suggests patterns of sexual and contraceptive behavior, degree of female negotiation power, access to health services.	Community survey, clinical records
	STD treatment	<ul style="list-style-type: none"> <li>Percentage of women diagnosed with an STD who completed the prescribed treatment.</li> <li>Percentage of partners of women who are diagnosed with an STD who report for testing.</li> </ul>	Indicates women's perceptions about and degree of understanding of treatment, and adequacy of treatment in the community.	Hospital or clinic records
	STD prevention activities	<ul style="list-style-type: none"> <li>Percentage of population at high risk (sex workers, migrant labor) who use condoms during sexual contact.</li> </ul>	Indicates adequacy of education campaigns in reaching target population.	Focus groups, interview of key informants, survey
	Reproductive tract infection (RTI) Proportional Morbidity Rate	Proportion of total infertility cases attributable to RTIs.	Suggests the magnitude of complications and consequences from RTIs.	Hospital or clinic records
	HIV and AIDS prevalence	Percentage of population sero-positive for HIV infection.	Indicates the potential magnitude of the AIDS problem in a community.	Anonymous testing of target population

<i>Life Cycle Stage</i>	<i>Indicator</i>	<i>Measure</i>	<i>Interpretation</i>	<i>Source</i>
C) Other reproductive health issues	STD and AIDS prevention awareness	Percentage of sexually active adults who know how to avoid acquiring STDs and HIV infection (abstinence, condoms, monogamous relationships).	Indicates the effectiveness of education programs.	Community survey
	Cervical cancer screening	Percentage of women over 35 years who have had at least one Pap smear.	Indicates degree of coverage of vulnerable group.	Hospital, clinic or program records, surveys
	Breast cancer screening	Percentage of women over 50 years who have had a physical breast examination by trained medical staff.	Indicates degree of coverage of vulnerable group.	Hospital, clinic or program records, surveys
Violence against women	Prevalence of gender-related violence in the community	Percentage of women who have been beaten by an intimate male partner.	Indicates magnitude of the problem.	Community based surveys
		Percentage of women presenting to health facilities with trauma attributable to domestic violence.	Indicates magnitude of the problem.	Hospital or clinic records
		Percentage of reported rape cases that are prosecuted; percentage of rape prosecutions that result in conviction.	Indicates level of state effort to address the problem.	Police and judicial records



# **Annex E. World Bank Population, Health, and Nutrition Projects with Women's Health and Nutrition Components (FY 1986–93)**

**Annex E. World Bank Population, Health, and Nutrition Projects with Women's Health and Nutrition Components  
(FY 1986-93)**

Components											
Country	Project Title	FY	IBRD/ IDA	Bank Financing US\$	Family Planning	Maternal Health	Cervical Cancer	Adolescent Fertility	AIDS/ STDs	Nutrition	Total Project Cost
<u>Africa</u>				<u>\$1162.3m</u>							
Cote D'Ivoire	Health and Demographic Project	86	IBRD	\$ 22.2m		*					\$ 29.7m
Ghana	Health and Education Rehabilitation Project	86	IDA	\$ 15.0m		*					\$ 16.0m
Niger	Health Project	86	IDA	\$ 27.8m	\$ 1.7m	*			*AIDS	*	\$ 29.3m
Rwanda	Family Health Project	86	IDA	\$ 10.8m	\$ 1.2m	*					\$ 14.5m
Sierra Leone	Health and Population Sector Support Project	86	IDA	\$ 5.3m	\$ 1.1m	*				*	\$ 5.7m
Gambia	National Health Development Project	87	IDA	\$ 5.6m	\$ 0.6m	*			*AIDS	*	\$ 20.8m
Guinea-Bissau	Population, Health and Nutrition Project	87	IDA	\$ 4.2m		*					\$ 4.4m
Malawi	Second Family Health Project	87	IDA	\$ 11.0m	\$ 4.8m	*				*	\$ 24.9m
Zimbabwe	Family Health Project	87	IBRD	\$ 10.0m	\$ 2.0m	*			*AIDS		\$ 52.6m
Burundi	Population and Health Project	88	IDA	\$ 14.0m	\$ 4.4m	*					\$ 18.7m
Ethiopia	Family Health Project	88	IDA	\$ 33.0m	\$ 3.3m	*				*	\$ 43.9m
Guinea	Health Services Development Project	88	IDA	\$ 19.7m		*			*AIDS	*	\$ 22.5m
Kenya	Third Population Project	88	IDA	\$ 12.2m	\$22.2m	*					\$ 28.3m
Uganda	First Health Project	88	IDA	\$ 42.5m	*	*			*AIDS		\$ 65.5m
Benin	Health Services Development Project	89	IDA	\$ 18.6m	\$ 0.3m	*			*AIDS		\$ 32.0m

Components															
Country	Project Title	FY	IBRD/ IDA	Bank Financing US\$	Family Planning	Maternal Health	Cervical Cancer	Adolescent Fertility	AIDS/ STDs	Nutrition	Total Project Cost				
Guinea-Bissau	Social and Infrastructure Relief Project	89	IDA	\$ 5.0m					*AIDS		\$ 17.0m				
Mozambique	Health and Nutrition Project	89	IDA	\$ 27.0m	*	*					\$ 42.5m				
Nigeria	Imo Abia Health and Population Project	89	IBRD	\$ 27.6m	\$ 0.1m	*			*AIDS		\$ 36.8m				
Zaire	National AIDS Control Project	89	IDA	\$ 8.1m					*AIDS		\$ 21.9m				
Cameroon	Social Dim. of Adj./ Human Resources Project	90	IBRD	\$ 21.5m		*			*AIDS		\$ 94.3m				
Chad	Social Development Action Program	90	IDA	\$ 13.4m	*										
Gambia	Women In Development Project	90	IDA	\$ 7.0m	*	*				*	\$ 15.1m				
Kenya	Fourth Population Project	90	IDA	\$ 35.0m	\$35.0m	*					\$ 41.3m				
Lesotho	Second Population, Health and Nutrition Project	90	IDA	\$ 12.1m	\$ 1.2m	*		*	*AIDS		\$ 22.1m				
Nigeria	National Essential Drugs Project	90	IBRD	\$ 68.1m	*										
Tanzania	Health and Nutrition Project	90	IDA	\$ 47.6m	\$ 9.5m	*			*AIDS	*	\$ 70.0m				
Ghana	Health and Population II Project	91	IDA	\$ 27.0m	\$ 4.9m	*					\$ 34.4m				
Kenya	Health Rehabilitation Project	91	IDA	\$ 31.0m					*AIDS						
Madagascar	Health Sector Improvement Project	91	IDA	\$ 31.0m	\$ 4.4m			*	*AIDS		\$ 42.5m				
Malawi	Population, Health and Nutrition Sector Credit	91	IDA	\$ 55.5m	\$ 5.8m	*			*AIDS	*	\$ 74.3m				
Mali	Second Health, Population and Rural Water Supply Project	91	IDA	\$ 26.6m		*		*	*AIDS		\$ 61.4m				
Nigeria	Health System Fund Project	91	IBRD	\$ 70.0m	*	*			*		\$ 94.5m				

Components											
Country	Project Title	FY	IBRD/ IDA	Bank Financing US\$	Family Planning	Maternal Health	Cervical Cancer	Adolescent Fertility	AIDS/ STDs	Nutrition	Total Project Cost
Nigeria	National Population Project	91	IDA	\$ 78.5m	\$78.5m	*		*	*		\$ 93.6m
Rwanda	First Population Project	91	IDA	\$ 19.6m	\$19.6m						
Senegal	Human Resources Development Project	91	IDA	\$ 35.0m	\$14.8m			*	*AIDS		\$ 52.8m
Togo	Population and Health Sector Adj. Project	91	IDA	\$ 14.2m	\$ 4.3m	*			*AIDS	*	
Zaire	Social Sector Project	91	IDA	\$ 30.4m	*	*					\$ 37.0m
Zimbabwe	Second Family Health Project	91	IBRD	\$ 25.0m	\$17.7m cofin.	*		*	*AIDS		\$116.9m
Equatorial Guinea	Health Improvement Project	92	IDA	\$ 5.5m	\$ 0.2m	*			*AIDS		\$ 6.0m
Mauritania	Health and Population Project	92	IDA	\$ 15.7m	\$ 6.9m	*				*	\$ 24.4m
Niger	Population Project	92	IDA	\$ 17.6m	\$11.6m	*		*	*AIDS	*	\$ 24.1m
Rwanda	Food Security and Social Action Project	92	IDA	\$ 19.1m	*	*				*	\$ 46.1m
Sao Tome and Principe	Health and Education Project	92	IDA	\$ 11.4m	*						
Angola	First Health Project	93	IDA	\$ 19.9m	\$ 0.6m				*AIDS		\$ 22.2m
Burundi	Social Action Project	93	IDA	\$ 10.4m	\$ 0.5m						\$ 15.7m
Guinea Bissau	Social Sector Project	93	IDA	\$ 8.8m	\$ 0.9m				*AIDS		\$ 9.7m
Madagascar	Food Security and Nutrition	93	IDA	\$ 21.3m		*				*	\$ 32.4m
Zimbabwe	AIDS Control Project	93	IDA	\$ 64.5m					*		\$ 87.3m

Components											
Country	Project Title	FY	IBRD/ IDA	Bank Financing US\$	Family Planning	Maternal Health	Cervical Cancer	Adolescent Fertility	AIDS/ STDs	Nutrition	Total Project Cost
<u>East Asia</u>				<u>\$ 618m</u>		*					\$177.4m
China	Rural Health and Preventive Medicine Project	86	IBRD	\$ 15.0m							
Indonesia	Second Nutrition and Community Health Project	86	IBRD	\$ 33.4m		*					\$ 57.7m
China	Integrated Regional Health Development Project	89	IDA	\$ 52.0m	*	*				*	\$113.0m
Indonesia	Third Health Project	89	IBRD	\$ 43.5m	*	*			*AIDS	*	\$104.5m
Philippines	Health Development Project	89	IBRD	\$ 70.1m	*	*					\$108.4m
China	Infectious and Endemic Disease Control Project	91	IDA	\$129.6m	*	*			*AIDS		\$113.0m
Indonesia	Fifth Population Project	91	IBRD	\$104.0m	\$104.0m	*		*			\$148.4m
Indonesia	Community Health and Nutrition Project	93	IBRD	\$ 93.5m	\$ 9.4m					*	\$164.1m
Papua New Guinea	Population and Family Planning Project	93	IBRD	\$ 6.9m	\$ 6.9m				*AIDS		\$ 32.7m
Philippines	Urban Health and Nutrition Project	93	IDA	\$ 70.0m	\$ 17.5m					*	\$ 82.2m
<u>South Asia</u>				<u>\$ 1888.5m</u>							
Bangladesh	Third Population and Family Health Project	86	IDA	\$ 78.0m	\$ 78.0m	*					\$213.8m
India	West Bengal - Fourth Population Project	86	IDA	\$ 51.0m	\$ 51.0m	*					\$ 89.9m
India	Fifth (Bombay and Madras) Population Project	88	IDA	\$ 57.0m	\$ 57.0m	*					\$ 78.2m

Components											
Country	Project Title	FY	IBRD/ IDA	Bank Financing US\$	Family Planning	Maternal Health	Cervical Cancer	Adolescent Fertility	AIDS/ STDs	Nutrition	Total Project Cost
Sri Lanka	Health and Family Planning Project	88	IDA	\$ 17.5m	\$ 5.3m	*					\$ 21.3m
India	Sixth Population Project	89	IDA	\$113.3m		*				*	\$231.0m
India	Population Training (Pop VII) Project	90	IDA	\$ 86.7m	\$ 86.7m	*				*	\$141.5m
India	Second Tamil Nadu Integrated Nutrition Project	90	IDA/ IBRD	\$ 95.8m	*	*				*	\$139.1m
Bangladesh	Fourth Population and Health Project	91	IDA	\$180.0m	\$ 61.5m	*			*	*	\$601.4m
India	Integrated Child Development Services Project	91	IDA/ IBRD	\$ 96.0m \$ 10.0m	*	*				*	\$157.5m
Pakistan	Family Health Project	91	IDA	\$ 45.0m	\$ 13.5m	*				*	\$ 62.9m
Sri Lanka	Poverty Alleviation Project	91	IDA	\$ 57.5m						*	\$ 85.0m
India	Child Survival and Safe Motherhood Project	92	IDA	\$214.5m	\$ 0.1m	*				*	\$329.6m
India	Family Welfare (Urban Slums) Project	92	IDA	\$ 79.0m		*				*	\$ 96.6m
India	National AIDS Control Project	92	IDA	\$ 84.0m					*AIDS		\$ 99.6m
India	Social Safety Nets Project	93	IDA	\$296.2m	\$ 40.0m					*	\$906.3m
India	Second Integrated Child Development Services Project	93	IDA	\$194.0m		*				*	\$248.8m
India	National Leprosy Elimination Project	93	IDA	\$ 85m							\$138.3m
Pakistan	Family Health Project	93	IDA	\$ 48.0m	\$ 12.0m					*	\$114.0m
<u>Latin America &amp; Caribbean</u> Brazil	Northeast Basic Health Services Project	86	IBRD	<u>\$1095.5m</u> \$ 59.5m	*	*					\$129.7m

Country	Project Title	FY	IBRD/ IDA	Bank Financing US\$	Components						Total Project Cost
					Family Planning	Maternal Health	Cervical Cancer	Adolescent Fertility	AIDS/ STDs	Nutrition	
Colombia	Health Services Integration Project	86	IBRD	\$ 36.5m		*					\$ 75.8m
Jamaica	Population and Health Project	87	IBRD	\$ 10.0m	\$ 6.8m	*					\$ 12.4m
Brazil	Northeast Endemic Disease Control	88	IBRD	\$ 10.0m					*AIDS		\$ 89.5m
Mexico	Water and WID Project	89	IBRD	\$ 20.0m		*				*	\$ 67.8m
Bolivia	Integrated Health Development Project	90	IDA	\$ 20.0m	*	*				*	\$ 38.6m
Bolivia	Social Investment Fund Project	90	IDA	\$ 20.0m	*	*				*	\$ 95.6m
Brazil	Second Northeast Basic Health Services Project	90	IBRD	\$267.0m	\$ 13.4m	*	*		*STDs	*	\$610.6m
Colombia	Child Community Care and Nutrition Project	90	IBRD	\$ 24.0m	*	*					\$ 40.2m
Haiti	Health and Population Project	90	IDA	\$ 28.2m	\$ 1.6m	*			*AIDS		\$ 33.7m
Jamaica	Social Sectors Development Project	90	IBRD	\$ 30.0m	*	*				*	\$ 67.0m
Mexico	Basic Health Care Project	91	IBRD	\$180.0m	\$ 3.5m	*				*	\$249.8m
Venezuela	Social Development Project	91	IBRD	\$100.0m	\$ 5.0m	*	*		*STDs	*	\$320.9m
Ecuador	Second Social Development Project	92	IBRD	\$ 70.0m			*			*	\$102.2m
Guyana	Health, Nutrition, Water and Sanitation Project	92	IDA	\$ 10.3m						*	\$ 11.7m
Colombia	Municipal Health Project	93	IBRD	\$ 50.0m	\$ 5.0m					*	\$ 83.1m
Guatemala	Social Investment Fund Project	93	IBRD	\$ 20.0m	\$ 0.6m					*	\$ 80.0m
Honduras	Nutrition and Health Project	93	IDA	\$ 25.0m	\$ 0.1m				*AIDS	*	\$ 54.2m
Chile	Health Sector Reform Project	93	IBRD	\$ 90.0m			*				\$298.8m
Nicaragua	Social Investment Fund Project	93	IDA	\$ 25.0m	*	*				*	\$ 68.0m

					Components								
Country	Project Title	FY	IBRD/ IDA	Bank Financing US\$	Family Planning	Maternal Health	Cervical Cancer	Adolescent Fertility	AIDS/ STDs	Nutrition	Total Project Cost		
<u>Middle East &amp; North Africa</u>				<u>\$ 561.3m</u>	*	*					\$ 30.6m		
Oman	Health Project	87	IBRD	\$ 13.3m	*	*					\$146.7m		
Turkey	Health Project	89	IBRD	\$ 75.0m	*	*					\$ 19.1m		
Republic of Yemen	Health Sector Development Project	90	IDA	\$ 15.0m	\$ 1.5m	*					\$171.3m		
Morocco	Health Sector Investment Project	90	IBRD	\$104.0m		*			*		\$572.0m		
Egypt	Social Fund Project	91	IDA	\$140.0m							\$ 63.2m		
Tunisia	Population and Family Health Project	91	IBRD	\$ 26.0m	\$ 26.0m	*					\$294.0m		
Iran	Health and Family Planning Project	93	IBRD	\$141.4m	\$ 59.5m						\$ 30.0m		
Jordan	Health Management Project	93	IBRD	\$ 20.0m	\$ 2.0m						\$ 30.2m		
Republic of Yemen	Fifth Family Health Project	93	IDA	\$ 26.6m	\$ 10.7m								
<u>Europe and Central Asia</u>				<u>\$ 371m</u>							\$130.0m		
Poland	Health Services Development Project	92	IBRD	\$130.0m	\$ 6.5m						\$207.5m		
Romania	Health Services Rehabilitation Project	92	IBRD	\$150.0m	\$ 14.4m		*		*AIDS		\$132.6m		
Hungary	Health Services and Management Project	93	IBRD	\$91.0m			*						

\* Component addressed by project

# Annex F. Glossary

**Acquired immunodeficiency syndrome (AIDS)**—a chronic viral infection that produces severe, life-threatening defects in the immune system, leaving the body vulnerable to other infections and cancers. AIDS is a fatal disease and is spread through sexual contact with an infected person, parenteral exposure to infected blood by transfusion or needle sharing, and perinatal transmission. AIDS has not been shown to be transmitted by respiratory droplet spread, by vectors such as mosquitoes, or by casual, nonsexual contact.

**Amniocentesis**—a procedure in which amniotic fluid is withdrawn transabdominally from the uterus of a pregnant woman. The fluid is analyzed to identify genetic defects or to determine the sex of the fetus.

**Anemia**—a condition characterized by a reduced number of red blood corpuscles or hemoglobin in the bloodstream, which occurs when the equilibrium between blood loss and blood production are disturbed. The patient initially suffers from fatigue and weakness, but if severe, anemia has serious health consequences. Moderate anemia is defined as 7-11 grams per dl hemoglobin; severe anemia is less than 7 g/dl.

**Cardiovascular diseases**—diseases of the heart and blood vessels.

**Cesarean section**—a surgical procedure used to deliver a baby by cutting through the woman's abdominal wall and uterus. Indications for surgery include obstructed labor and fetal distress.

**Child mortality rate**—the number of deaths among children from age one through four in a given year per 1,000 children in that age group at the mid-point of that year. Sometimes child mortality is used to refer to deaths among all children under age five.

**Chlamydia**—a bacterial infection that is transmitted sexually or to infants during childbirth. It is often asymptomatic; some women have vaginal discharge, pain on urination, spotting, and lower abdominal pain. If untreated, chlamydia can cause pelvic inflammatory disease and premature delivery. Infected infants can develop respiratory and eye infections.

**Cytology**—the microscopic analysis of human cells, collected through procedures such as smears, scraping and aspiration. Cytological examination enables the identification of conditions such as infections and cancers.

**Dilatation and curettage**—a surgical procedure in which the lining of the uterus is scraped and its contents are removed.

**Disability**—adjusted life year (DALY)—A measure of the loss of healthy life, known as the burden of disease. It has two components: (1) losses from premature death, defined as the difference between the actual age at death and life expectancy at that age in a low-mortality population; and (2) loss of healthy life resulting from disability.

**Ectopic pregnancy**—a life-threatening condition in which the fertilized egg develops outside the uterus, often in the Fallopian tube.

**Genital mutilation**—Also known as female circumcision, genital mutilation entails removal of the woman's external sexual organs (the degree of mutilation varies), rendering intercourse and childbirth painful and potentially hazardous. It has no health benefits and causes permanent sexual dysfunction.

**Genital ulcers**—skin eruptions located on or near the vagina or anus, mainly caused by chancroid,

**syphilis**, and herpes, which are mainly transmitted sexually and can be treated with antibiotics. Chancroid ulcers are painful and cause bleeding, vaginal discharge, and swollen lymph nodes in the groin. Syphilis lesions are usually painless, but can lead to serious illness, including neurological and cardiovascular infections. Herpes lesions may have no symptoms or may be extremely painful; complications include neurological and genital infections.

**Gonorrhea**—a bacterial infection that is transmitted sexually or to infants during childbirth. It is commonly asymptomatic in women, although some women may have vaginal discharge and burning urination. If untreated, it can cause pelvic inflammatory disease with subsequent risk of infertility or ectopic pregnancy. Among newborns, it causes an eye infection that can lead to blindness if untreated.

**Human immunodeficiency virus**—the virus that causes acquired immunodeficiency syndrome (AIDS).

**Infant mortality rate**—the number of infants who die below the age of one year per 1,000 births in a given year.

**Life expectancy**—the average number of additional years that a person can expect to live if current mortality trends were to continue. Life expectancy at birth is the most common measure used to assess trends and compare subgroups.

**Malnutrition**—a disorder of nutrition that includes both under- and over- nutrition. It may be caused by an unbalanced/insufficient diet or by defective assimilation and utilization of foods.

**Maternal mortality rate**—the number of deaths of women due to pregnancy and childbirth complications per 100,000 women aged fifteen to forty-five or fifteen to forty-nine years. This rate measures a woman's lifetime risk of dying associated with reproduction; it is influenced by the likelihood of becoming pregnant and by the risk of dying in childbirth.

**Maternal mortality ratio**—the annual number of deaths to women due to pregnancy and childbirth complications per 100,000 live births. This ratio measures a woman's chance of dying once pregnant, known as obstetric risk.

**Menopause**—the permanent cessation of menstruation in the human female, which normally occurs

around the age of 50. It may be accompanied by physical and psychological symptoms related to hormonal and other changes occurring at this period.

**Menstrual regulation**—a procedure for inducing menstruation using a hand-held syringe to empty the uterus up to 49 days after a previous period.

**Obstetric fistulae**—a rupture that results in an abnormal passage linking two areas such as the vagina, rectum, bladder, and abdominal cavity. Obstetric fistulae are caused by difficult labor, unsafe abortion, and traditional practices such as genital mutilation.

**Osteoporosis**—a bone disorder characterized by a reduction in bone density and increased porosity and brittleness, leading to increased susceptibility to fractures. Post-menopausal osteoporosis occurs in women within fifteen to twenty years after menopause.

**Pap smear**—a test in which cells taken from the cervix are examined for uterine cancer. Pap is a shortened version of Papanicolaou, the test's inventor.

**Partograph**—a graphic record of cervical dilation used to monitor a woman in labor.

**Pelvic inflammatory disease**—a severe infection of the upper reproductive tract, which can lead to infertility and ectopic pregnancy.

**Perinatal mortality rate**—the number of fetal deaths after twenty-eight weeks of pregnancy plus the number of deaths to infants under seven days of age per 1,000 live births.

**Reproductive tract infection**—a general term for various types of infections affecting the reproductive organs, including vaginal and cervical infections, genital ulcer disease, and pelvic inflammatory disease. Major sources of RTIs include sexual transmission and unhygienic practices during abortion, delivery, IUD insertion, and genital mutilation.

**Sexually transmitted diseases (STDs)**—an umbrella term for various infections that are transmitted through sex, including chancroid, chlamydia, genital herpes, gonorrhea, human papillomavirus, syphilis, and trichomoniasis.

**Syphilis**—a sexually transmitted infection that produces genital lesions, which can increase the risk of

contracting HIV. Infection during pregnancy can cause miscarriage, stillbirth, and congenital defects. If left untreated, syphilis can cause neurological complications.

**Total fertility rate**—the average number of children that would be born to a woman during her lifetime if she were to pass through her childbearing years conforming to the age-specific fertility rates of a given year.

**Ultrasonography**—the visualization of deep structures of the body by recording the reflections of

(echoes of) pulses of ultrasonic waves directed into the tissues. Ultrasonography is often used to identify fetal and abdominal abnormalities.

**Uterine prolapse**—a sinking of the uterus into or extending outside the vagina, usually resulting from injuries during childbirth or advanced age.

**Vacuum aspiration**—a method of pregnancy termination in which the contents of the uterus are removed by suction, using either a hand-held syringe or electric pump.

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1. The first part of the document discusses the importance of language in human communication. It highlights how language allows us to share ideas, emotions, and experiences with others. This section also touches upon the role of language in cultural identity and the preservation of heritage.

2. The second part of the document explores the historical development of various languages. It mentions how languages have evolved over time, influenced by geographical factors, social interactions, and technological advancements. This part also discusses the impact of language contact and borrowing on the development of new linguistic forms.

3. The third part of the document focuses on the current state of language research. It mentions how modern linguistics has moved beyond the study of grammar and syntax to include the study of language in context, such as in social and cognitive linguistics. This section also discusses the importance of interdisciplinary approaches in understanding the complexities of language.

4. The fourth part of the document discusses the challenges and opportunities in language education. It mentions how language education is essential for global communication and cultural understanding. This section also discusses the importance of developing language proficiency in a second language and the role of technology in language learning.

5. The fifth part of the document discusses the future of language research and education. It mentions how emerging technologies, such as artificial intelligence and machine learning, are being used to study and teach languages. This section also discusses the importance of continued research in language and the role of language education in preparing students for a globalized world.

6. The sixth part of the document discusses the role of language in the workplace. It mentions how language skills are essential for many jobs, especially in international business and global communication. This section also discusses the importance of language training for employees and the role of language in career advancement.

7. The seventh part of the document discusses the role of language in the legal system. It mentions how language is used in legal proceedings and the importance of accurate translation and interpretation. This section also discusses the role of language in the development of legal systems and the importance of language in the protection of human rights.

8. The eighth part of the document discusses the role of language in the arts and humanities. It mentions how language is used in literature, film, and other forms of artistic expression. This section also discusses the importance of language in the study of human culture and the role of language in the development of the arts and humanities.

9. The ninth part of the document discusses the role of language in the environment. It mentions how language is used in environmental communication and the importance of language in the protection of the environment. This section also discusses the role of language in the development of sustainable communities and the importance of language in the study of environmental issues.

10. The tenth part of the document discusses the role of language in the future. It mentions how language will continue to evolve and the importance of continued research and education in language. This section also discusses the role of language in the development of a better world and the importance of language in the pursuit of knowledge and understanding.

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